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THE
ROSE BOOK
BY
SHIRLEY HIBBERD.

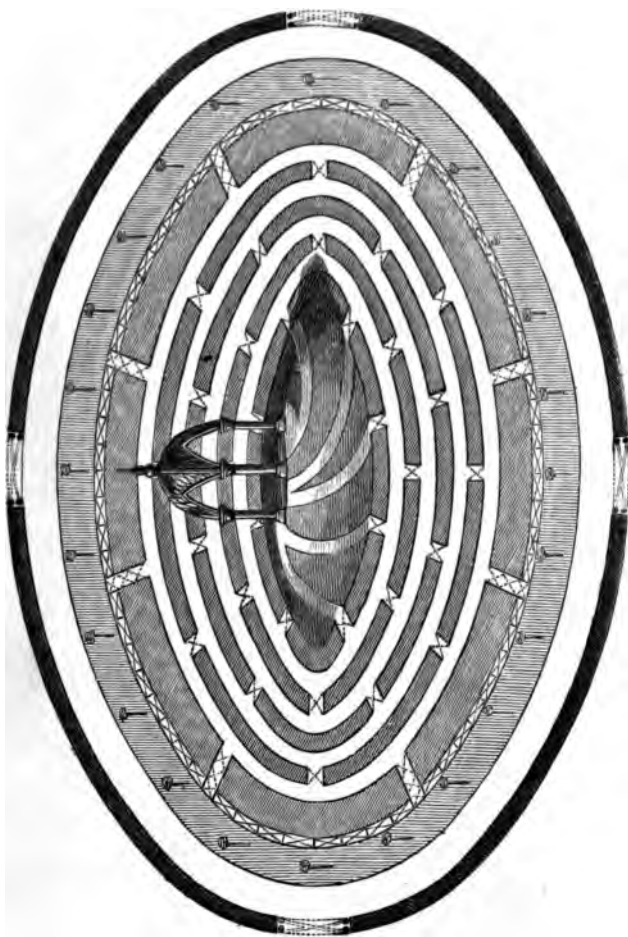
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THE ROSE BOOK.

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DESIGN FOR ROSARIUM.

THE ROSE BOOK

A PRACTICAL TREATISE

ON

THE CULTURE OF THE ROSE.

COMPRISING

THE FORMATION OF THE ROSARIUM, THE CHARACTERS OF SPECIES
AND VARIETIES, MODES OF PROPAGATING, PLANTING, PRUNING,
TRAINING AND PREPARING FOR EXHIBITION, AND THE
MANAGEMENT OF ROSES IN ALL SEASONS.

BY

SHIRLEY HIBBERD, F.R.H.S.,

AUTHOR OF "RUSTIC ADORNMENTS," "PROFITABLE GARDENING," "BOOK OF
THE AQUARIUM," ETC., ETC.

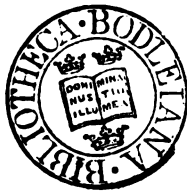
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PREFACE.

AMONG the myriads of books that have been written on the subject of the present volume, the "Rose Amateur's Guide," by Mr. Rivers, of Sawbridgeworth, and the "Rose Garden," by Mr. W. Paul, of Waltham Cross, have each had so extensive a circulation, and have exercised so great an influence on rose culture in this country, that on a first consideration of the matter, the addition of another work to the list may appear superfluous. But as different minds take different views of the same subject, I here offer to the lovers of the rose the views of an amateur cultivator, not as opposed to, but as differing from, the views taken by the distinguished professional cultivators whose works have just been named.

The book to which I have principally referred in the preparation of this work is the Book of Nature, and the best index to that book in my possession is my own garden,

1994

...and with a view to the ...
...that they may ...
...The ...
...all my ...
...be more than ...
...how I have ...
...many ...

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Chapter I.

The Families of Wild Roses.

THE ROSE BOOK.



THE FAMILIES OF WILD ROSES.

S it is better to do one thing well than two indifferently, I shall be quite content if I succeed in explaining to the satisfaction of all lovers of the rose, how to grow the flower to perfection. But whether I succeed or not in that attempt, I shall certainly not endeavour to treat of the botany of the rose, or of its history as a cultivated flower, in any except a most superficial and general way. And for a good reason. All that is known of the botany of the rose may be found in the books by those who need the information; and if there are differences of opinion as to the limitations of species and their several relationships, the better reason for avoiding the subject here, for we might soon exhaust the space needed for disquisitions on rose-culture, and the book would be not only dry but useless. As to the history of the rose, that has never yet been written, but some adventurous

spirit will, some day, seize upon the subject, and out of it evoke some new enchantments for the reading public. It is, indeed, a theme which might tempt any lover of roses given to literary adventures, but is too vast to permit of condensation into any introductory chapter of a work mainly devoted to a quite different purpose. I shall therefore only bring forward here such few botanical and historical matters as appear to be properly introductory to the chapters which follow on the cultivation of the rose, and I trust my brevity will be considered as evidence of prudence, and not of flippancy; or rather, will be accepted by the reader as a proof that I abhor the repetition of facts already elsewhere stated, because I have a story of another kind, and of my own, to tell. To treat intelligibly and practically of the rose, is for the present enough for my ambition, and I feel that—in this book at least—I can afford to treat both botany and history with comparative indifference.

The order ROSACEÆ is one of the most important in the vegetable kingdom, and in its economic adaptations ranks parallel with *Gramineæ*; for, from the roses we obtain the majority of edible fruits, and from the grasses most kinds of bread stuffs and food for cattle. Compare a wild rose with the flower of a strawberry, raspberry, apple, pear, or plum, and the general family likeness will be evident. Any good botanical work will give the characters of

this great order, and show how our various hardy fruits are related to the rose. Of the group of true roses, which has a place in the third sub-order, under the head of *ROSÆ*, there appear to be ten distinct sections: these, and a few of their species, we shall enumerate.

BOTANICAL GROUPS.

1. *Rosa ferox* is the type of a series known as *Feroces*, and so called on account of their fierce aspect when divested of their leaves, when they are seen to bristle from head to foot with a formidable array of spines. They are mostly Asiatic in origin, produce red flowers, and are deciduous. None of these are grown in our gardens.

2. *R. bracteata* (the parent of the Macartney rose) is the type of a group called *Bracteatae*. These roses are evergreen, the branches and fruit covered with woolly hairs; the leaves glossy. This is an interesting family to the florist, as it has furnished our gardens with some useful autumnal roses. *R. microphylla*, the "small-leaved rose," properly belongs to the section of *Bracteatae*, and will be considered in connection with it when we come to the floral groups.

3. *R. cinnamomea* is the type of a large, but not important section of English and American roses, to which it gives its name. *R. Carolina* and *R. Lindleyi* are in this section, which consists of species tolerably well known, but rarely cultivated.

4. *R. Alpina*, the origin of the Boursault roses, introduces us to an important section, called the *Pimpinellifoliæ*. In this section we have, besides the Boursaults, *R. sulphurea*, the double yellow, one of the most celebrated of the roses which are difficult to bring into perfect bloom ; also, *R. lutescens*, a Siberian rose, which produces pale yellow flowers and black hips. In this section occur also many British roses ; as, for example, *R. Wilsoni*, *Sabini*, and *Spinossissima*, from the last of which has originated the group of garden varieties called Scotch roses.

5. *R. Damascena*, *R. Gallica*, and *R. centifolia*, constitute together the section of *Centifolium*, or, hundred-leaved roses ; and this is the most important to the florist of all the botanical sections. From *R. Damascena*, the Damask rose, have proceeded by hybridization with other species and their varieties, the Hybrid Perpetual, Bourbon Perpetual, Damask, and Four Seasons roses. *R. Gallica* has had an important share in the parentage of Hybrid French, Hybrid Chinese, and Hybrid Bourbon roses ; and from *R. centifolia*, the Provence and Moss roses have sprang. This is an important section, considered economically, for *R. Gallica* supplies the red rose-leaves of the shops. From *R. Damascena* and *R. centifolia* otto of roses is distilled, and the petals of *R. centifolia* are largely used in medicine.

6. *R. villosa*, a British rose, represents a section to which it gives its name. They are all formid-

ably armed, and amongst them are some very interesting species. Here, for instance, we find *R. alba*, the type of a small group of garden roses, which produce handsome flowers, varying in colour from white to blush.

7. *R. rubiginosa*, the sweet-brier rose, is the type of an interesting section, called *Rubiginosæ*, in which are many European and British species of wild roses. Conspicuous among them is *R. lutea*, the varieties of which are known as Austrian briars, and greatly esteemed as free-blooming yellow roses.

8. *R. canina*, the dog rose, which abounds in the hedgerows of Britain, is the type of a section called *Caninæ*, the species of which are in no respect less important than those of *Centifolia* and *Damascena*. The dog rose, though valueless, if considered in respect of its flowers, plays a grand part in the rosery, in furnishing the roots and stems on which thousands of the choicest roses are nourished and displayed. All the Chinese, tea scented, fairy, and true Bourbon roses belong to this section, having descended from *R. indica*, the common China rose, and *R. semperflorens*, the ever-flowering rose. The Noisettes owe their parentage in part also to varieties of *R. indica* and *R. semperflorens*.

9. *R. Systyla*, a British species, is the type of the *Systylæ*, a section of sub-evergreen roses, which differ from *R. canina* in the coherence of the styles into the elongated column. In this section we find

the Ayrshire roses, *R. arvensis*, the evergreen roses, *R. sempervirens*, the *multiflora*, and the Prairie roses; the last being varieties of *R. rubifolia*.


10. *R. Banksiæ* is the type of a restricted but highly interesting section of climbing roses, natives of China; known in gardens as Banksian roses. They produce immense numbers of small flowers arranged in corymbs.



Chapter III.

The Families of Cultivated Roses.*

THE FAMILIES OF CULTIVATED ROSES.

VERY writer on the rose has his own peculiar views as to the proper classification of the named varieties, and the trade are not all agreed as to the classes to which many varieties should be assigned. As to classes, professors, amateurs, and nurserymen all take different views of their limitations and characteristics, and it cannot be helped; for where certain classes blend and mix on their boundaries, there is room for any diversities of opinion, however decisive may be the characteristics of the class as a whole. Thus, if we compare *Souvenir d'Elise* with *Ophirie*, we see in an instant the striking distinctions which may be established between *Teas* and *Noisettes*; but if, on the other hand, we place *Jaune Desprez* and *Gloire de Dijon* side by side, the striking distinctions instantly vanish, and it becomes an easy matter to understand how in some catalogues they are separated, and how in others they are either both classed as *Teas* or both as *Noisettes*. Nevertheless, with many such difficulties to contend with, roses may be classed with tolerable definiteness for

the convenience of the cultivator according to their peculiarities of growth and appearance, season of bloom, and floral and physiological affinities, and the classification is worth attempting, both to furnish the rosarian with an intelligible key to the catalogues, and with a few fundamental ideas respecting the uses and the management of the several classes of cultivated roses. In placing before the rose cultivator a classification differing slightly from others that have been recently published, the explanation may be needed that it has been one of my chief objects to make the classification correspond as nearly as might be consistent with the principles followed with the best rose catalogues, for as the cultivator is of necessity frequently referring to those, a system which requires him to make but few allowances, and disturbs the order of reference the least possible, is certainly to be preferred, provided it serves the all-important purpose of indicating distinctions, relationships, and affinities with tolerable accuracy.

SUMMER ROSES.

1. PROVENCE OR CABBAGE.

L. Rosa centifolia. *F. Rosier cent feuilles.*—The common Cabbage is one of the loveliest roses we possess, whether considered as to form, colour, or fragrance. It is supposed to have been introduced

in 1596, and has certainly been a favourite in this country for more than three centuries. All the varieties are hardy, free-flowering, and deliciously sweet. Among the best varieties may be named *Reine de Provence*, with fine globular, glossy lilac-rose coloured flowers; this makes a fine standard. *Unique* is of the purest white; the form cupped, rather uneven, but scarcely surpassed by any other white rose. Among the hybrids are *Blanchefleur*, with pale flesh flowers, changing to pure white, which forms a good standard; *Princesse Olementine*, paper white, very large and pure, but thin petals, forms a fine half standard; *Comte Plater*, cream tinted with buff, finely formed, very free to bloom, hardy, and good for either standard or dwarf; and *Comtesse de Ségur*, pale flesh, makes a fine half-standard. *De Meaux* or *Pompon* is one of our oldest and most beautiful garden roses, with small, rosy-pink and lilac flowers, much used for edging. The common Dutch Provence is one of the best roses to force.

Although a few have been named above as suitable for standards, they all do remarkably well as dwarfs on their own roots. On light sandy soils, they should always be grown on their own roots, and the soil should be abundantly manured for them. On stiff clays they may be either on their own roots or on short brier stocks. In any case they must be very hard pruned, every shoot being cut in to within four or five buds of the base.

2. THE MOSS ROSE.

L. Rosa centifolia muscosa. F. Rosier cent feuilles Mousseuse.—This charming rose appears to have been introduced from Holland in 1596. It is commonly described in books and catalogues as still unsurpassed, but if that were the case, we might cancel all the charming hybrids, and be content with the original. It is very certain that the Moss rose is a sport of the common Provence, as not only does the Provence appear in its most typical forms among its seedlings, but the variety itself will occasionally produce shoots destitute of moss, but with genuine Provence flowers. Among the gems of this group are several that bloom in autumn, and Mr. W. Paul, in his "Rose Garden," separates them, so that the summer-blooming varieties occur in group VII., and the autumnals in group XX. This might be justifiable if the autumnal-blooming Moss were really perpetual in their habit, but the fact is, after the first bloom in summer, they give but a few occasional blossoms, and as they are only in their prime at the same season as all others of the same race, there are insufficient grounds for a separation. Among the best of the summer blooming varieties, the following are strongly recommended:—*Alice Leroy*, rosy pink, makes a fine standard; *Baronne de Wassenaër*, rich rose, forms a fine standard; *Gloire des Mousseuses*, clear pale rose, large and handsome, does well as a

standard; *Luxembourg*, purplish crimson, most vigorous in habit, and will make either standard or pillar; *Unique*, pure white; *White Bath*, a grand white, makes a fine standard; *Cristata*, the well-known crested Provence; *Celina*, purplish crimson, very dwarf in habit; *Clemence Beaugrand*, delicate pink, large, not full; *Laneii*, lively rose, most beautiful, both in bud and expanded. Of autumnal-blooming Moss roses, the following are the best:—*Madame Edouard Ory*, rich rose, globular, beautifully formed, a very constant autumn bloomer and the best of this section; *Salet*, bright pink, changing to rose; *Alfred de Dalmas*, rosy flesh, blooming in clusters, makes a fine standard or pillar; *General Drouot*, purplish crimson, very dark and dull, but a fine rose; this must be worked on *Manetti*, or *Boursault*, not on brier.

All the Moss roses require a comparatively pure air and a rich soil. Those named for standards and pillars grow freely if worked on the brier, but the others among the summer-blooming varieties had best be on their own roots or on *Manetti*. The delicate growers require a light rich soil, such as would suit Tea roses, and all of them need to be liberally treated. Seven years ago, all the varieties of Moss roses did well at Stoke Newington, but buildings have increased so rapidly that now such varieties as *Madame Ory*, *General Drouot*, and *Unique* refuse to grow at all, and some others bloom but sparsely;

nevertheless, common Moss and other of the hardier kinds still continue to bloom superbly, and as a rule the summer-blooming kinds suffer less from smoke than the autumnals. Respecting the autumnals, it is best not to have them on briars at all, except in clay countries, for after a few years they are apt to die out, but on Manetti they do well. They all require close pruning.

3. THE DAMASK ROSE.

L. Rosa Damascena. F. Rosier Damas.—This rose is supposed to have been introduced from Syria in 1573. The true Damask roses are by no means so beautiful as they have been generally supposed by those who know more of the varieties than the originals. But the varieties raised of late years are generally superb, and we have an immense number of exhibition roses of the highest excellence, in which distinct features of the Damask rose may be traced. This group is easily distinguished by its pale green far-apart pubescent leaves. There are two distinct sections, namely, the Damask and the Perpetual Damask, and they differ so greatly that it will be proper to keep them apart in this classification, as their union under one head could serve no useful purpose. One of the oldest varieties of Damask rose is the *Red and White Monthly*, now rarely seen, but worth remembering, as from it have originated many of our best autumn-blooming roses.

La Ville de Bruxelles is a charming variety of this series, the colour lively lilac-rose, exquisitely deepening towards the closely crumpled centre. This makes a fine pillar or standard, and is a valuable town rose. *Madame Hardy* is pure white, sometimes with a green centre, but a first-rate rose, being of luxuriant habit and its flowers finely shaped. *Madame Zoutman* (or *Söetmans*) is of a pale flesh colour, tinted with fawn, one of the most beautiful of all light roses. *Semiramis*, salmon-rose, is very distinct and handsome. All these grow well worked on briers, and form handsome standards; they also do well on their own roots, and if the soil is gravelly or chalky, they may be grown on Manetti. They require abundant manuring and moderate pruning.

4. THE FRENCH ROSE.

L. Rosa Gallica. F. Rosier de Provins.—This has been one of the most famous sections, having occupied the leading place in English gardens previous to the introduction of the Hybrid Perpetuals. The French rose was introduced to this country very early from France or Italy. The date 1596 is usually given as that of its introduction, but that too suspiciously agrees with the date given for the introduction of several other roses. These roses usually grow in a very upright and compact manner. They are mostly very double and well formed, and in fact there are among the Gallicas many varieties that

produce flowers that are literally without parallel in other groups, for purity of colour, perfect form, and exquisite fragrance. It is worth the exhibitor's while to remember that, besides their high exhibition qualities, these roses bear carriage better than any others. There is a strong family likeness among them, and hence, though the varieties are numerous, a moderate number selected will serve very well to represent the whole. The finest of the high-coloured varieties of this section are *Grandidissima*, brilliant crimson, shaded with purple; *Boula de Nanteuil*, crimson-purple, superb; *Kean*, crimson, almost scarlet; *Latour d'Auvergne*, mottled rose, finely shaped; *Ohl*, velvety crimson; *Gloire de Colmar*, deep crimson, shaded with velvety crimson; *Duchess of Buccleuch*, mottled crimson. The best of those in shades of rose are *Letitia*, *Trancon Goubault*, *Bizarre Marbrée*, rose-mottled. There are some good light and variegated roses in this section. *Œillet Parfait* is a hybrid between the French and the Damask, the flowers are blush, with rosy-crimson stripes; it is the best of all striped roses, and bears a close resemblance to a carnation. *Œillet Flammand*, white, striped with rose and lilac; *Triomphe de Rennes*, rose, marbled with slate; *Adèle Prévost*, silvery-blush; *Perle des Panachées*, pure white, with red stripes; and *Tricolor de Flandres*, are all worthy of a place among the most *recherché* roses.

The varieties of *Rosa Gallica* are mostly very

hardy, so that they may be grown in the most northerly parts of Britain with the least risk. They are not very particular about soil, though of course, as they are worth good culture, so their blossoms are more freely produced and of a much higher quality when they are grown in a good soil and abundantly manured. They may be grown in any form, either as standards on the brier, or as dwarf bushes on brier, Manetti, or their own roots; when grown as tall standards their appearance is most ungraceful. To grow these for exhibition, the trees should be severely disbudded early in June, and supplied with plenty of liquid manure until the bloom is over. They require moderately close pruning; all the small wiry wood should be cut clean out, and the strong shoots should be cut back to within eight or nine buds of their base, and the weak shoots to within two buds of their base.

5. THE WHITE ROSE.

L. Rosa alba. *F. Rosier blanc.*—This is a small and interesting section, the original species of which was introduced in 1597. These roses have green shoots, light glaucous and glossy foliage, and the flowers are all of light colours. *La Remarquable*, *Madame Legras*, and *Princesse de Lamballe* are the best whites of the series, and the last of the three is the purest of this section. *Madame Audôt* is beautifully shaped, the colour pale pink or flesh; *Sophie de Baviere*, deep

rosy-pink, is a fine show rose. *Félicité Parmentier* is formed like a ranunculus, the colour delicate blush, deepening to pink at the centre. *La Séduisante*, rosy-blush, is a fine show rose, large and full. There are a few others scarcely at all inferior to those named. These roses may be grown in any form and on any stock; they require to be pruned in the same way as French roses. They grow freely and bloom abundantly, and are invaluable to form groups on lawns, and to relieve high colours in the rosarium.

6. THE HYBRID CHINA ROSE.

L. Rosa indica hybrida. F. Rosier hybride de Bengale.—These vary among themselves considerably, being the result of crosses with Chinas, Noisettes, French, Provence, and Bourbon; but a Chinese element may be readily traced in the general habit, leafage, and style of flowering. Some of the best varieties in this section have been obtained accidentally, others by careful fertilization of Tea and other China roses with the pollen of some hardy summer rose. They have ample, luxurious, glossy, smooth foliage, a free and graceful habit of growth, the branches long and sub-evergreen. Among them are many show roses of the highest quality, and many vigorous-habited varieties that make fine pillar and weeping standards. The best of this section, with flowers highly coloured, are

Chénodolé, brilliant crimson ; *Brennus*, deep carmine ; *Fulgens*, scarlet-crimson, exquisite in colour ; *Triomphe d'Angers*, bright carmine, large and double. *Rivers's George IV.* is superb, the colour deep violet-crimson, large and full, and the plant one of the most robust growers of its class. *Paul's Vivid*, scarlet-crimson, will never disappoint if allowed abundance of food. Others not so highly coloured, but equally grand in their way, are the following :—*Blairii No. 2*, a superb rosy-blush, with magnificent foliage : this makes a fine weeping standard. *Blairii No. 1* is not so good, but, by its extravagant profusion of bloom, makes a very attractive picture when grown as a full-headed standard. *Comtesse de Lacépède*, silvery-blush, is a very distinct and finely-formed rose ; this makes a grand pillar. *Double-margined Hip*, creamy-white, edged with pink, is extremely pretty. *General Allard*, deep rose ; *Leopold de Bauffremont*, rosy-pink, exquisitely formed ; *Madame Plantier*, pure white ; *Triomphe de Bayeux*, creamy-white, very full and finely formed, one of the grandest known for a pillar or tall standard, and requires to be very slightly and cautiously pruned.

These roses are, generally speaking, too vigorous to form dwarf bushes, and they are not well adapted for pot culture ; nevertheless, a few may be selected for both these purposes. But for poles, pillars, large standards, and weeping trees, they cannot be sur-

passed, though there are a few Noisettes that come into close competition with them. There is no stock so good as the brier for these roses, but when grown for pillars and bushes they may be worked on Manetti. They require an abundance of manure, not only in the autumn, but again in the spring, to keep the ground moist about their roots all the summer, and afford extra nourishment by the washing down of its fertilizing properties by rain and watering. During dry weather, all the spring and summer, they should have abundance of water. In pruning, great care must be taken not to cut back the strong shoots indiscriminately. These roses do not like the knife, and, if cut about severely, will never bloom. All the strong shoots may be shortened moderately, say to leave at least fifteen buds remaining, or let the shoots be eighteen inches or two feet in length, and all misplaced and crowded shoots should be cut clean out. By this process, there will be a tolerably good bloom, and a good growth to follow. When grown as weeping standards, or on pillars, thin out the shoots in November, so as to remove all superfluous and crowded growth, and leave all the rest its full length, merely removing the tips of the longest shoots. These will bloom most profusely, and must be well fed to sustain them in the production of blossoms that will weigh down the branches to the ground. As soon as the bloom is over, shorten in all the shoots that

bloomed to within four or five buds of their base. They will immediately throw out vigorous shoots ; of these select a certain number, and train them out to form a handsome tree, and remove the rest by a clean cut to their base. The shoots left their whole length will bloom magnificently the following season.

7. HYBRID BOURBON ROSES.

L. Rosa Bourboniana hybrida. *F. Rosier hybride de l'Ile Bourbon.*—These bear many close resemblances to the sixth group of Hybrid Chinas, having thick, large, handsome, glossy leaves, a vigorous habit of growth, and in the splendour of their flowers. The gem of the family is *Coup d'Hebe*, large, double, and most beautifully formed, the petals arranged with exquisite symmetry ; colour, delicate wax-like rosy flesh ; this forms a grand pillar. *Charles Lawson*, a great favourite for exhibition, having handsome foliage, and large bright pink and perfectly symmetrical flowers. *Paul Ricaut* is another very popular show rose, and one of the most perfect in form ; the colour is brilliant carmine, sometimes shaded with velvety purple. *Paul Perras*, pale rose, large and full, is a robust grower, and makes a superb pillar, or large standard. *Frederick II.*, large deep crimson, also of robust growth. *Juno*, pale rose, globular, very large, makes a noble pillar or large standard. *President Pierce* and *Lord John Russell* are two more fine roses of this race ;

the last-named a very moderate grower—the flowers small, bright, pink, and pretty.

The varieties of this group require the same general treatment as the Hybrid Chinas, and must be equally well fed ; but they bear pruning closer, and require it. Those which grow most vigorously, and in the style of the Hybrid China, should be less severely pruned ; but such as Paul Ricaut, President Pierce, and Lord John Russell, being moderate growers, may be shortened to within five or six buds of the base, and at the same time all the spurs which have produced bloom must be removed entirely. Where an early bloom is required, prune in November, and for a late bloom at the end of April. When required to bloom in their natural season, prune about the middle of February.

8. AUSTRIAN BRIER ROSES.

L. Rosa lutea. F. Rosier capucine.—This small family of roses enjoys quite an aristocratic reputation, and in their way rank with white elephants, and other rarities that are spoken of in whispers. The original species is reported to be common on the hills of North Italy, and has been known in English gardens since 1596. They constitute a very distinct group, the species producing single yellow and copper-coloured flowers of great beauty, and the varieties superb double yellow flowers, which are greatly and deservedly prized,

both for their intrinsic loveliness and the difficulty of producing them. The *Single Yellow* is the finest in respect of colour of all yellow roses. This and the *Austrian Copper* will succeed best on their own roots. *Harrisonii* is a fine double yellow rose of American origin; and *Persian Yellow*, introduced from Persia in 1838, is also an exquisitely beautiful rose, which, if properly managed, blooms most profusely. Both these do well as standards on the brier; *Harrisonii* may also be grown dwarf for beds, or trained to cover a pillar. All these roses require a pure air and a warm, moist, rich soil. With these aids they grow freely; and, to ensure a good bloom, it is only necessary to be careful in pruning to slightly shorten the strong shoots, and leave all the twiggy side shoots untouched.

9. SCOTCH ROSES.

L. Rosa spinosissima. *F. Rosier Pimprenelle.*—These hardy, free-growing, and sweet-scented roses are only fit for the roughest purposes, such as forming hedges and covering banks, and for the margins of wilderness walks. They will grow in any tolerably good soil, and they bloom very early in spring, before any other roses are to be seen out of doors. Their blossoms are very pretty, but have, as yet, all the characteristics of *wild roses*, and, therefore, are unworthy of a place in the rosarium. There are many varieties, which differ but slightly from each

other. The best are *Loch Ness*, pale rose; *Flora*, deep rose; *Plato*, lilac rose; *Snowball*, white; *Arthur's Seat*, blush; *Townsend*, blush; *William IV.*, pure white; *Venus*, dark red. *Stanwell Perpetual*, with pink flowers, blooms freely in the autumn, and is the only one of this class that does so. If introduced to gardens, the best way to use them is on their own roots, as dwarf bushes to form clumps and beds, which will be very gay in May with a profusion of flowers. The yellow roses in this section are chiefly interesting, because of the prospect they afford of obtaining from them some good varieties by the fertilization of their flowers with the pollen of some of the yellow roses that are most prized. All the Scotch roses bear seed abundantly, so those who like to engage in raising seedlings have at present a wide field before them; but, as the varieties acquire more doubleness, seed will be less plentifully produced, and the sphere of operations will be more contracted.

10. AYRSHIRE ROSES.

L. Rosa arvensis.—The Ayrshire roses have no merit as exhibition flowers, but there are no climbing roses to surpass them for hardiness, profusion of bloom, and ready adaptability to almost any purpose where a rampant growth is one of the first requisites. Hence they answer admirably to clothe dead trees, form festoons and archways, cover banks,

and crown the roofs of rustic buildings with mountains of wild growth and charming flowers. When worked on tall briars they form the most graceful of all weeping trees, and require no pruning beyond occasional thinning, either to reduce their size when necessary, or to allow of the admission of air and light to the centre of the tree. In selecting climbing roses it should be remembered that the Ayrshires are less beautiful than the varieties of Sempervirens, but they are much hardier; they will grow where no other rose will, for all they really require is a little light, and they bloom a fortnight earlier than the Sempervirens. The best are *Splendens*, *Ruya*, *Queen of the Belgians*, and *Miller's Climber*.

11. MULTIFLORA ROSES.

Rosa multiflora.—The type of this group is a native of China and Japan, introduced here in 1804. They differ greatly from all other roses; one of the finest is *Grevillei*, or the Seven Sisters' rose, a climber which grows with tremendous vigour, and blooms so profusely that a fine plant will show thousands of blooms of several distinct shades of colour, all expanding at the same time. All these roses are tender, and unfortunately have a habit of growing very early in spring, so that their first shoots are frequently cut off by frost. They require a very dry, warm position, a rich, deep, well-drained

soil, and to be scarcely at all pruned, the strong ripe shoots being left nearly their full length. Where the climate suits them, as in some sheltered spots in the south and west of England, they may be trained to pillars, or grown as weeping standards, for either of which purposes they are admirably adapted in habit of growth and bloom. Standards planted in places where they would be likely to suffer in winter might be taken up in autumn, their roots packed in moss, and be kept in a warm shed or dry cellar, and be planted again in spring. There are few amateurs, however, who will consider them worth so much trouble when, after all, they are still subject to many risks of injury, by sudden changes of weather, when making their first growth.

12. EVERGREEN ROSES.

L. Rosa sempervirens.—The original of this section is a free-growing and very beautiful wild rose of Italy. The varieties are not numerous, but they are very pretty, and are much prized as climbers. They are furnished with an ample, handsome, dark green foliage, which is retained great part of the winter, but never the whole winter through. Their flowers are small, and are produced in clusters; they are mostly pale in colour, and very fragrant. *Princesse Marie* has the most colour of any, being of a bright rosy-pink; *Myrianthes* is very beautiful;

so are *Banksiaeflora*, *Donna Maria*, *Jaunatre*, and *Princess Louise*. The most vigorous grower is *Rampante*, which has pure white flowers; and the most tender is *Triomphe de Bolwyller*, the blooms of which in colour and fragrance much resemble those of *Noisette Lamarque*. With the exception of the last, however, which is a hybrid between a *Sempervirens* and a Tea rose, all these roses are very hardy, and not at all particular about soil or situation. They make grand weeping standards, and when used as climbers may be treated in every respect as recommended for Ayrshires. *Félicité Perpétué*, one of this group, makes an admirable stock to work free-growing roses on for culture as dwarfs, or for pillars and pyramids.

13. BOURSAULT ROSES.

L. Rosa alpina.—The Boursault roses are very distinct in character, and though not such rampant growers as Ayrshires and *Sempervirens*, they are invaluable for walls, pillars, and arches, and other positions where only a moderate growth is required, but where also there must be a blaze of colour. The first of the group was that now entered in the catalogues as the *Old Red Boursault*, which was the first double variety of *Rosa alpina*, raised by a Parisian rose amateur named M. Boursault. With the exception of *Gracilis*, which has thorns, all the members of this group have smooth reddish

branches, an ample and handsome leafage, and they flower most profusely when quite established. The finest of the group is *Amadis*, with semi-double brilliant purplish-crimson flowers, which change to purplish-lilac. This throws out long flexible pendulous branches, and makes a most graceful and glowing pillar or weeping standard. The *Blush Bour-sault* has large double blush flowers, and is a fine tree for a wall or a weeping standard. *Inermis* has large double bright pink flowers, which change to pale rose; it is distinct and good, and a most vigorous grower. *Gracilis* is the most graceful of all in growth, and is to be preferred for any purpose where a weeping habit is required. It throws out long pendulous shoots, covered with a luxurious foliage, and the flowers are of a brilliant rose colour, and very neatly formed. These roses require a rich deep soil, and the less they are pruned the more graceful will be their habit and the more abundant their flowers. The only pruning allowable is such as may be required to prevent crowding, and to keep the long shoots within reasonable bounds.

14. BANKSIAN ROSES.

L. Rosa Banksiæ.—This is a small but very choice group of climbing roses, by some believed to have been derived from *Rosa sinica* (syn. *lævigata*), by others supposed to be quite distinct, though closely related by botanical affinities. *Rosa sinica*, the

three-leaved China rose, has the same habit of growth as the Banksians, but the flowers are large, white, and solitary, and are succeeded by elliptic orange-red muricate fruit. The Banksians produce their flowers in corymbs, and the fruit is a small globose black berry. These are differences sufficiently striking, perhaps, to indicate that the Banksian roses are not the produce of *R. sinica*.

All the true Banksian roses are sub-evergreen climbing shrubs of very rambling and disorderly habit, vigorous in growth, with small glossy leaves, and producing a profusion of clusters of small, pretty flowers, which, in some varieties, are very brilliant. They are tender in constitution, and bloom so early that they frequently suffer from spring frosts, even in sheltered places. The *Double White Banksian* was introduced in 1807, and was so named in honour of Lady Banks. It is a beautiful rose, the flowers being very double, pure white, and emitting a perfume resembling that of violets. The *Yellow Banksian* was introduced in 1827; the flowers are bright buff-yellow, small, double, abundantly produced, and though always described as scentless, they emit a very agreeable perfume early in the morning, or late at night, when wet with dew. *Jaune Serin* has larger flowers than the Yellow, their colour is a more pure yellow, and the tree grows more vigorously. *Jaune Vif* is a very pretty yellow, with small flowers. *Fortuniana*, in-

troduced by Mr. Fortune in 1850, produces large white flowers, which are very fragrant; this is truly beautiful, and a good companion to *Jaune Serin*. The Banksians should always be grown on south walls; they are too tender for any exposed position. They require a warm, dry soil, and must be allowed to grow pretty much as they please. The time to prune is immediately the bloom is over, some time in June; then all gross shoots should be cut out, but none of the twiggy branches should be shortened, for it is on these the flowers are produced. If these twiggy branches get crowded, some may be removed, but as a rule the cultivator should encourage their production; and if the branches are shortened indiscriminately, the trees will produce a number of strong shoots, and little or no flowering wood at all. In districts too bleak for Banksian roses on open walls, they may be grown to perfection on the back wall of a lean-to greenhouse, and have a most charming appearance when in bloom.

15. HYBRID CLIMBING ROSES.

There are three good climbing roses that do not admit of being placed in either of the preceding groups, but which, nevertheless, merit a place here, because of their intrinsic excellence. *Madame d'Arblay*, or *Wells's White*, raised by Mr. Wells, of Redleaf, produces its flowers in immense clusters,

and they are thoroughly double and very pretty. This is a rose of the most vigorous growth, and in a deep strong soil will surpass almost every other rose known in the rapidity and extent of its production of strong flowering shoots. *The Garland*, also raised by Mr. Wells, has lilac and blush flowers, fading to white; it is less vigorous than the preceding. *Sir John Sebright*, a hybrid musk rose, was raised by Mr. Rivers. It produces its flowers in large clusters; they are of a bright crimson scarlet, and very fragrant. This is invaluable for its colour, a quality in which climbing roses are generally deficient.

16. DAMASK PERPETUAL ROSES.

Unlike the Perpetual Moss, which are not perpetual, these lovely roses really do bloom in autumn, and would be among the most popular—as they were in times gone by—except that the Hybrid Perpetuals so completely eclipse them that in a very short time hence their day will be over, and their race will be run. One of the happiest touches of Mr. Rivers's lively pen is that passage in the "Rose Amateur's Guide," in which he sighs at the thought of their approaching extinction, and writes down their history for the information of the New Zealander of A.D. 2500. While they last, all true rosarians will appreciate the delicious perfume of these roses, and have something to say in their vindication on their compact habit of growth, and abundant bloom during summer and

winter. They are indeed fine roses for beds and clumps, and Mr. Rivers says, and with no exaggeration, of their excellence, "Every gentleman's garden ought to have a bed of Crimson Perpetual roses, to furnish bouquets during August, September, and October; their fragrance is so delightful, their colour so rich, and their form so perfect." *Crimson Superb*, also known as *Mogador*, is one of the finest of this fine group. The flowers are brilliant crimson, shaded with purple. This grows with great vigour on the Manetti, but not freely on the brier; it is also a good rose on its own roots. *Crimson Perpetual*, or *Rose du Roi*, is a superb crimson rose, very fragrant, and a true perpetual. *Bernard*, one of its sports, is a perfect gem, the flowers smaller than the average, and their colour a delicate pink tinged with salmon, and very fragrant. This is a dwarf grower, and does best on Manetti, or its own roots. *Julie de Krudner* has pale blush flowers, rather small, very pretty, and very sweet. *Madame Thélér* is of medium size, the colour pink, and the habit of the plant delicate, but not tender. *Laurence de Montmorency*, deep rosy-pink, tinted with lilac, cupped, very double, and every way good, though less of a Damask than any of the group. *Manoury* is large and handsome, the colour deep rose with purplish-slate tint, the habit robust and very free to bloom. *Celina Dubois*, a blush white, is a capital rose for a clump, the flowers being abundant and lasting, and very sweet.

This is a sport from Crimson Perpetual. All these do well on Manetti or their own roots, and all except *Crimson Superb* make nice standards on the brier. They all require a rich soil, and to be annually refreshed with good manure; and in dry seasons they need liberal watering during the summer, in order to bloom finely in the autumn. They require to be rather closely pruned. They are quite hardy, and do tolerably well in the vicinity of towns.

17. HYBRID PERPETUAL ROSES.

F. Rosier hybride Remontante.—This group is the rosarian's stronghold. Whatever his peculiar predilections for Teas, Damasks, or what else, he must grow these in quantity, and rely principally upon them for display, as he must also for all the various purposes to which roses are applied in garden and conservatory decoration. Here are the best roses for bleak hills, smoky towns, and soils of questionable character. Here are also the best for training to pillars and trellises, for growing in pots, for forming rich masses in the flower garden, for forcing, and for exhibition. Though the most popular, because the most useful of all, the Hybrid Perpetuals are but of recent creation, the first really noted variety, *Princesse Hélène*, dating back to 1837; and, as remarked by Mr. Paul in his "Rose Garden," there were not many beyond a score entered in the catalogues in 1840. At the present day there are

not less than a thousand named varieties of this section, and of these probably one-half would be worth cultivating, though of course among so many there would be a large number too nearly alike to be really needed for a fair representation of the group. It would be much more easy, however, to select the most characteristic members of this family than to define its typical characters, for though the term "Hybrid Perpetual" conveys to the mind of the experienced rosarian some very distinct ideas, there is perhaps not a single variety in the series that could be justly selected as a type of the whole. All the families that have been concerned in the production of this class appear variously amongst them by their most distinctive features. Some Hybrid Perpetuals exhibit the characters of the hybrid Chinese more strongly than any others; some show their affinities with the Bourbons; others with the perpetual Damasks; and in very many we have a foliage strongly resembling one section, and flowers which bear a likeness to another. They are in fact, generally speaking, not the results of first or second crosses, but of an infinity of seminal removes from specific or strikingly characteristic types; and their excellent qualities are in plain truth the result of "artificial selection," and the most remarkable triumph anywhere and anyhow effected in the amalgamation of breeds and races.

The group being large, and presenting many

relationships, there have been many attempts made to classify them according to their affinities—all I think in vain, for no sooner is the classification determined on than we find it impossible to refer the most important roses to their proper places in it, so completely in some cases have the family relationships been extinguished or merged in characteristics common only to the subjects it is desired to classify. I think Mr. W. Paul has only laid the foundation for a series of contentions—whenever rosarians shall think it worth while to contend—in the classification of these roses in his “Rose Garden.” He casts them in three groups, according as he finds them more or less related to Chinese and Damask, Bourbon Perpetuals, and Rose de Rosomène. I think I shall much better consult the interests of the rosarian if I enumerate a few of the most distinct and useful varieties in their several colours and qualities, without reference to their real or supposed origin, for this is really traceable in very few cases indeed.

WHITE.—There are no really superb whites in this group. The best for many years past was *Dr. Henon*, which is a nice rose at times, but usually grows weakly, and is shy of blooming. *Louise Darzins*, recently introduced, has quite superseded *Dr. Henon*, and yet is not equal in quality to many of the coloured roses. It is a moderate grower, and produces small, neatly-formed, thoroughly double, pure white flowers. *Princesse Imperiale Clotilde* is a

most beautiful glossy white, a good grower, and blooms freely. *Mademoiselle Bonnair* is a white which has occasionally a rose tint; it is truly a fine rose, and, when well grown, large and full. *Joan of Arc* is a charming variety, white, with a delicate rose centre, and finely formed. *Imperatrice Eugenie* is almost a blush; it may be described as a white tinted with rose; it is really good. *Virginal* is pure white, but rather thin, and the plant weak in growth and shy to bloom.

LIGHT ROSE AND BLUSH.—Here we find several of the most exquisitely formed and proportioned of any roses known. *Madame Vidot* is as near perfection in form as it is possible to conceive, the colour a delicate transparent rosy-flesh. *Madame Rivers*, clear flesh, is a charming flower, large and full, and as regular as if modelled by machinery. *Madame Knorr*, when full grown, scarcely admits of description, so exquisitely is it folded in the bud; a matchless rose when half-blown. *Queen of Denmark*, *Mademoiselle Eugenie Verdier*, *Alex. Belfroy*, *Caroline de Sansal*, and *Paul's Queen Victoria*, are all gems in their way.

ROSE AND CHERRY COLOURS.—Among the rose-coloured varieties, *Jules Margottin*, a descendant of *Brennus*, is the finest rose we possess for refined beauty, vigour of growth, and abundant bloom. *Comtesse Cecile de Chabrillant*, bright carmine-rose, elegantly cupped, is a charming flower when well

grown, but when only half-fed, comes thin and single. *Baronne Prevost*, *Belle de Bourg-la-Reine*, *Lælia*, *Louise Peyronny*, *William Griffith*, *Victor Verdier*, and *Madame Boll* cannot be surpassed for beauty of form and purity of colour, and they are all free in growth and bloom. *Madame Domage* has immense flowers, finely shaped, and perhaps the most fragrant of any in the group. But in this section *Anna Alexieff* is more truly a Perpetual than any, and the most profuse in bloom of any rose in the whole catalogue of Perpetuals, and a most beautifully-formed rose when grown liberally. *General Brea*, *Madame Furtado*, and *Thomas Rivers* are three more of the most desirable varieties, of colours approaching more or less to true rose. *Souvenir de la Reine d'Angleterre* is one of the largest roses known—colour, clear bright rose; this requires good culture, or it does not open fully. At Stoke Newington, in 1860, the huge buds fell off without expanding, and sometimes rotted and expanded at the same time. It is remarkably free and robust when liberally dealt with. *Professor Koch*, rosy-cerise, and *Mademoiselle Betsy Haiman*, lively cerise, are two of the gems of this section.

CRIMSON AND RED.—The most brilliantly coloured rose among the Hybrid Perpetuals is *Triomphe de Caen*, which approaches very near to true scarlet. *Senateur Vaisse*, a finely-shaped rose of a light crimson colour, is alike remarkable for its brilliant fiery

glow, and the abundance of its blossoms. *Gloire de Santenay* surpasses all crimson roses in colour and form, but is, unfortunately, not free; and only under very favourable circumstances can it be depended on to bloom in autumn. That marvel of roses, *General Jacqueminot*, has enjoyed until quite recently an immense fame as the most richly coloured of all crimson roses; but it is quite surpassed, and must take second rank in its class. However, all who have once made a pet of this splendid variety will keep it, for there is a peculiar individuality in its broad, fleshy, Camellia-like petals, and it has the good quality of blooming in the autumn till actually stopped by the frost, and after very hard frosts it will sometimes open a few buds, and light up the dulness of December with a glow of colour that warms as well as illuminates the scene so favoured. *Prince Leon* is a fine companion to *Madame Vidot* in form and qualities, the colour carmine-cherry, and the shape literally perfect. *Lord Raglan*, *Maurice Bernardin*, *Lord Macaulay*, and *Eugene Appert* are rivals of *General Jacqueminot* in depth and intensity of colour; and if the last-named of the three had but a better form of petal and greater fulness, it would be the most remarkable rose known, and worth a pilgrimage of five hundred miles for a sight of it. With all its faults, it is, like the General, one of those roses that a lover of colour and character in flowers never forgets. *Wilhelm Pfitzer*, brilliant red,

rather variable, and *Lord Palmerston*, fresh cherry-red, are worthy of a place in the choicest collection.

DARK.—The darkest rose known is *Alexandre Dumas*. Some that approach it in colour are, however, better in quality. *Christian Putner*, purple, shaded with crimson, is a fine rose ; so is *Louis XIV.*, though some of the folks who write the random, superficial, and hap-hazard sketches that appear in the journals, pronounce this rose to be worthless. It may be to those who cannot grow it, but when handled with skill it is one of the loveliest, and will always bloom twice in the season, and with tolerable freedom. *Victor Trouillard* and *Cardinal Patrizzi* make a nice pair of blackish-crimson varieties of similar habit, and wonderfully rich in colouring. *Lord Clyde* is one of the grandest of dark roses ; and scarcely inferior to it is Margottin's *Comte Cavour*, a deep purplish-crimson, shading to nearly black. *Vulcain*, deep purple, is thin and loose, but a fine rose, considering its colour. Thus we have enumerated fifty of the finest Hybrid Perpetuals, and yet have scarcely touched them as a whole, for there are dozens of varieties equal to those enumerated, or which for some special reasons are as fully entitled to be specified, but which it is impossible for us to mention at all. It cannot be helped ; the nursery catalogues must supply the needful information to those who want complete descriptions of all the roses in this vast group, and to those

trustworthy sources of information I must refer readers who wish to know further on this interesting subject.

Though these roses are called "Perpetuals," they are more strictly Twice-Blooming roses, except in some few instances of varieties that scarcely pause in the production of blossoms from June to December. Generally speaking, they bloom magnificently in June and July, and then go out of bloom till September, when they are again gorgeously attired, and continue so more or less till stopped by frost. But as Twice-Blooming roses, they are for the most part invaluable. They vary in habit from varieties sufficiently vigorous to make the best of pillar and wall roses, to varieties adapted for edging the large compartments in the rosary. The treatment of them will have to be regulated by the circumstances under which they have been produced and planted. Generally speaking, they do well either upon the brier or Manetti stock, and it is important for the rosarian to bear in mind that all the free-growing varieties do well upon *any stock*. I have some charming little half-standards of Jules Margottin and General Jacqueminot worked on stout stems of the common Cabbage rose and Maiden's Blush, and thrifty dwarfs of Géant, August Mie, and others worked on Félicité Perpetué, so indifferent are many of the most free varieties, provided they have roots of some sort, and plenty of fibres to gather food for their support.

But according to the stock, or rather according to the nature of the roots, must be the treatment. When worked on briers, a moist, deep, rich clay soil will be the best possible; briers will do well on heavily-manured loam, but very badly on chalk and gravel. If worked on Manetti, it matters not what the soil is, but the better the soil the finer the flowers. Those who live on poor gravel, sand, or chalk soil should grow only Manetti roses; and these, if liberally manured, will be better than brier roses, or roses on their own roots. The Manetti is the only stock which may be made available for the growth of roses on ungenial soils, and for that purpose there is no limit to its use; it is, in fact, a good feeder to the rose it carries under any and every circumstance. But roses worked on *Félicité*, *Cabbage*, and other stocks, and also when on their own roots, require a deep, well-worked, and well-manured loam, and above all things there is a need for complete and efficient drainage.

The rosarian will not need to be told that, as these roses give at least two crops of blossom, and in some instances scarcely cease to bloom from June to January, they require abundant feeding from the surface. A top-dressing of guano and wood-ashes, or of half-rotten dung in July, will greatly assist the autumn bloom. A plentiful supply of water during the summer is another great help, as will be also, if convenient, the covering of the ground with any

material likely to prevent evaporation, such as flints, moss, etc. As for the pruning of these roses, cut back to a good plump bud, so as to remove all the light spray which has produced flowers, and cut the moderate growers closer and more severely than those that grow vigorously. When shoots as thick as a carpenter's pencil are produced, six to ten buds may be allowed upon an average to each shoot; if these are always cut back to buds placed outwards, the growth will always be of a nature to keep the head open, and for this purpose all shoots that crowd the centre should be removed by a clean cut to the base. To make the most of these roses, they should be freely but carefully pruned during summer. In the first place, they generally produce for a first crop more blossom-buds than they can fairly open, and these must be thinned as soon as they are large enough to be distinguished. As a rule, at least one-half the buds may be removed with advantage to those that remain, and the removal should be by a clean cut to within three or four buds of the base of the shoots on which they are produced. These shoots will push, and produce autumnal flowers. In the case of wanting a few extra-fine single flowers, remove, without using the knife at all, all the buds except those at the tops of strong shoots. These two or three will open in a style that will astonish folks who are unaccustomed to growing flowers for exhibition. As soon as the first bloom is over, cut back

all the shoots moderately, so as to get an autumn bloom from well-placed buds on the stout hard wood. Never allow seed to swell and ripen ; to allow dead flowers is an injury, to say nothing of its slovenly appearance.

18. BOURBON ROSES.

L. Rosa Bourboniana. F. Rosier de l'Ile Bourbon.

—This superb section of autumnal roses deserves the fullest attention and most generous favour of the amateur, for it comprises a vast number of varieties that stand quite alone in the splendour of their qualities, and the whole of the section possesses the property of blooming abundantly both early and late—very many only attaining perfection when the cool, moist autumnal weather has set in. It appears that the Bourbon race originated in the Isle of Bourbon, in the form of a characteristic seedling, in the garden of M. Perichon. In 1822 M. Breon, who was then curator of the Botanic Garden there, sent seeds and plants of the original to Monsieur Jacques, gardener at the Chateau de Neuilly, near Paris, and by him it was distributed to the Parisian amateurs. The roses now reputed to owe their parentage to the original “Rose de l’Ile de Bourbon,” are of very various characters, but they generally agree in producing large, dark, leathery, shining leaves, and finely-formed, stout, full, and richly-coloured flowers, which, however, are not very fragrant. The prin-

cial differences observed amongst them are in their respective degrees of robustness and habits of growth, some being well adapted to form grand pillar roses and large-headed standards, while others are of almost diminutive habit, and must be grown as dwarf bushes. Among the many fine show roses of this section, the following are gems of the first water :—

LIGHT.—The finest of all delicately-coloured roses is *Souvenir de la Malmaison*, which when happily circumstanced will produce nearly as many flowers as leaves, and it has tremendous vigour of growth when encouraged ; the colour is a clear flesh, deepening to delicate pink in the centre, most beautifully folded in the bud, and with a very handsome dark green foliage. It has the bad habit of not opening freely in poor soils, and in cold climates and smoky atmospheres. It being one of my favourites, I can only grow it under glass in my London garden, and there planted out in a broad rich border, and aided by manure-water, it blooms almost without intermission the whole year round, and opens its flowers sufficiently to show their exquisite perfection, for when full opened they are spoiled. *Acidalie* is another fine light rose, being sometimes white and at other times a delicate blush, and usually in perfection during autumn. *Queen of the Bourbons* is a remarkable rose ; as soon as you have seen one bloom you may know that it will not cease to pro-

duce a succession, until the frost literally melts the flowers in the bud, and then it must cease blooming. The colour of this variety is delicate fawn and rose; there is something delicious in its appearance, and it well deserves the name of Queen. *Madame Angelina*, with cream-coloured flowers of medium size, is very distinct and good, but unequal to the foregoing in the profuse production of its charming flowers. *Mademoiselle Emain*, pale flesh, changing to white, is an exquisite variety, the flowers being so pure, so chaste in the bud, and opening so full and perfect; it is, moreover, very free to bloom. *Comtesse Barbantanne*, a large blush rose, finely formed, must be included in any list intended to comprise the best.

ROSE AND PINK.—*Apolline*, a vigorous grower, will make a fine 'pillar rose. *Baron Gonella*, bright cerise, with thick petals, and the flower extra large and finely formed, is a first-class show rose. *Baronne de Noirmont*, rosy-pink, with the odour of violets, is another charming variety. *Justine*, lively pink, is a good autumn rose, but has a loose habit, and a dingy foliage. *Louise Margottin*, satin rose, cannot be beaten in its colour. *Louise Odier*, *Modele de Perfection*, *Sir Joseph Paxton*, *Souvenir de Dumont d'Urville*, and *Pierre de St. Cyr* are the cream of the rose-coloured Bourbons.

CARMINE AND CRIMSON.—*La Quintinie* is one of the finest crimson roses, but too dwarf in habit. *Aurore du Guide* is quite superb at times, but not

certain, and it is of straggling habit. *Bouquet de Flore* is beautifully coloured, but not quite full. *Catherine Guillot*, the same colour as the last, and with most elegantly-formed petals, arranged with perfect symmetry, is a gem of the first water. *Dr. Leprestre* is a grand crimson; *Dupetit Thouars* equally so; *George Peabody*, lovely, but a poor grower. *Paul Joseph*, *Souchet*, and *Gloire de Rosomenes*, which, with all its glory of colour is but semi-double, make up the list of the best of the high-coloured Bourbons.

DARK.—*Reveil*, an almost black-purple, is one of those few roses that defy description, and make a deep and lasting impression on the mind of the enthusiastic amateur. It is a marvel when well grown. *Victor Emmanuel* is a fine companion to H. P. Louis XIV., the colour a rich deep velvety plum, large, finely formed, petals very smooth and stout, a glorious dark rose. *Prince Albert*, violet-crimson; *Souvenir de l'Arquebuse*, purple and crimson; *Doc-teur Berthet*, deep reddish-purple; *Camille de Châteaubourg*, violet; and *Comice de Seine et Marne*, violet-crimson, are all superb varieties that may be depended on to do their duty.

The Bourbons require the same treatment as Hybrid Perpetuals, to which, indeed, they are closely related. All except the diminutive growers make fine brier standards; the vigorous growers are well adapted for pillars when worked on Manetti; and whether on Celine, Manetti, or their own roots, they

make nice compact bushes for beds and borders of the flower garden. As to pruning, it is scarcely possible to prune them out of bloom; nevertheless it is best not to cut these too severely, but in any case the twiggy branches on which last year's flowers were borne must be cut away to well-placed buds equidistant all round, and at lengths proportionate to the character of the tree and the robustness of the variety. The more moderate the growth, the closer may they be pruned. It is most important to feed Bourbons liberally; their abundant bloom exhausts their vigour, and this must be compensated by heavy manuring at planting time, and top-dressings in February and June. If dung spread over the ground in summer is objectionable to the eyesight, cover it with a thin sprinkling of earth or moss, or carefully prick it in between the rows, using a very small fork in the operation; then tread the ground firm, and remove the footmarks by a light touch with the rake.

19. CHINA ROSES.

L. Rosa Indica. F. Rosier Bengale.—These roses would probably by this time have been almost forgotten had not *Cramoisie supérieure*, one of the most brilliant and ever-blooming, been selected to fill the Deodara circles and other beds at the Crystal Palace, where its constant fiery glow of colour causes an incessant inquiry at the nurseries for the "Crystal

Palace Rose," the result of which is that thousands are sold annually, and the attention of rosarians is occasionally recalled to a section which comprises a few varieties eminently adapted for bedding. Mr. Rivers gives the year 1718 as that of the introduction of this rose to our gardens; Mr. Cranston says it was introduced in 1789. There is a strong family likeness among the varieties of this group, and we may well believe that there has been but a small incorporation of foreign blood, if any at all, in the extension of the family to its present dimensions, which are not gigantic. These roses agree in being rather tender, of delicate habit of growth; only a few are fit for standards, though they all make nice heads if budded on stocks of six to eighteen inches high. They are wiry in their growth, and usually make long joints. They flower most abundantly; there are no roses like them in that respect, but the blossoms are only semi-double, or absolutely single, and quite destitute of fragrance. They are, therefore, not show roses, but invaluable for beds and clumps and marginal lines. In preparing the soil for them, leaf-mould should be used liberally, with thoroughly rotten dung, and as a rule it is best to have them on their own roots. *Cramoisie supérieure* has rich glowing crimson flowers, and is the most perfect bedding rose we have; it is also good for pot culture, especially to give warmth to a collection of Yellow Teas. *Fabvier* is of the same colour and

nature as *Cramoisie*, but only semi-double, and less effective in a mass. *Madame Bréon* is a nice rose for pot culture, the colour carmine-rose, the flower well formed. *Marjolin*, dark crimson, grows sufficiently robust for a standard, and is always in bloom. *Mrs. Bosanquet* is in reality the gem of this series, though not a high-coloured rose. It is a counterpart of *Souvenir de Malmaison*, but in a weaker habit, though for its class it is a good grower, and will make a standard. The colour is pale flesh, waxy in appearance, most elegantly formed, and every way beautiful. The common *White* is a first-rate China rose for bedding; and the common China, or *Blush*, is one of the liveliest roses we possess, though quite destitute of qualities, and equal in merit only to the commonest border flower.

20. MINIATURE CHINA ROSES.

Rosa Lawrenceana.—No one can doubt that whether the Fairy Rose be a distinct species or not, it is at least sufficiently distinct from all others to require separate classification. All the roses of this group are adapted only for pot culture, though they have been used out of doors with success in some few favoured localities. They are of most elegant habit, forming small dense shrubs, smothered with lovely flowers of the smallest size, and the brightest crimson and rose colours. Though the flowers are without fragrance the foliage emits a sweet odour,

and the pruning and propagating of these pretty little shrubs are in consequence most agreeable operations.

21. TEA-SCENTED ROSES.

L. Rosa Indica odorata. *F. Rosier Thé.*—This is not the most showy, but the most choice and refined of all the families of roses. The Teas are *par excellence* the aristocracy of the race, and however the rosarian may neglect other groups, and disdain summer roses because of the profusion and excellence of perpetuals, it will be at his peril to refuse homage to these princely personages, or to exclude the most popular and effective of them from his garden list. Let the amateur gardener grow what he pleases, and take his fair share of garden pleasures, but let him not be too bold in making pretensions to enthusiasm in rose culture until he has got so far in the practice as to thoroughly appreciate the beauties of the Teas, and show himself capable of growing them in perfection. When you meet a collector of old china you at once ask him what he possesses of Palissy, Worcester, Wedgewood, Liverpool, and so forth—when you meet a collector of shells, you ask him if he possesses a king specimen of *Cedo Nulli*—when you discuss a chop and a bottle of '45 with a member of the Smithfield Club, of course you ask him what progress he has made in Devons, Shorthorns, and

Longwoods; and when a man proclaims himself a lover of roses you ask him which are his favourite Teas, and what is the extent of his collection of those beauties. To grow Tea roses is, indeed, an object worthy the ambition of the most abandoned horticulturist; and the task recommends itself to the enthusiast, because it is surrounded with difficulties. The mere booby who thinks to accomplish wonders without first going through a patient course of preparative practice, will only proclaim his sorry case to all beholders when he puts forth his clumsy hands among these lovely but coy and capricious flowers. They seem to have been designed by nature to furnish the highest test of skill and devotion in rose culture, and as a standing proof to all would-be rosarians that the cultivation of roses does not merely consist in first buying the plants and then sticking them in the ground.

The first of the Tea roses known in England was the Blush, introduced in 1810. In 1824, Mr. Parkes introduced the Yellow Tea-scented (which is still entered in the catalogues), a very beautiful semi-double and slightly scented rose. These two became the parents of the numerous varieties now in cultivation, and hence the distinctness of character perceptible throughout the whole group, much as they differ in degrees of robustness and other qualities. The characteristics of the group are an ample, glossy, deep-green foliage, and

generally a free, robust growth, though there are many weak growers among them; flower-buds conical; flowers varying in colour from white and yellow to rose and pink, but never crimson or purple, and emitting a delicious odour, which is usually compared to that of tea newly opened in the chest. They are all comparatively tender, and when grown without proper care they are pretty certain to be reduced in number by severe winters, cold springs, and mildew and drought in summer. A certain few of the number seem capable of withstanding any combination of adverse circumstances, but of the rest it must be said they should be well grown or not grown at all. The first requisite to success is a nourishing, well-drained, warm soil, and shelter from east winds. A south wall is a capital place on which to train the most vigorous growers of the family, but these should never be expected to go higher than ten feet, though a growth of twenty feet may be obtained where the circumstances are very favourable. If they must be grown in exposed situations, some plan of protection should be adopted, or the trees should be lifted in autumn, and planted in dry earth in a shed or under a south wall till spring, and then be returned to their former position. If this is done with care, standard Teas may be kept for many years, and will be well worth the little trouble occasioned; but when an extra severe winter occurs, all Tea

roses not under glass are sure to suffer, and the cultivator must take his risk of losses. All the free-growing varieties do remarkably well on briers, and make charming standards; and all of them—free, shy, and otherwise—do well on their own roots, and make beautiful beds. When so grown, the most delicate are easily protected by covering the beds with moss or litter all winter, for though the frost may kill their tender shoots, the protected roots will escape, and throw up a new growth during the summer, which will bloom abundantly in autumn. But if on Manetti stocks, a severe winter usually kills them outright; for this stock begins to grow very early in the season, and if the shoots are killed back as low as the junction of rose and stock, there is nothing left but Manetti roots, and the roses are lost entirely. Just as there are risks attendant on the culture of Teas in the open ground, there are no risks at all in growing them under glass. The difference in their behaviour is marvellous, and we have but to plant them out in a conservatory border, and keep them freely ventilated and frequently syringed, and they will bloom with such profusion as literally to astonish the novice who has taken the proper means to ensure success. When grown on briers, the soil should be a stiff loam abundantly manured; when on their own roots, a light soil consisting of peat, rotted turf from a loamy pasture, and decayed stable dung.

equal parts, will suit them to perfection. Tea roses on their own roots should never be planted in the stuff known as "common garden soil."

The yellow roses of this family are certainly its gems, and of those there are full particulars in the chapter on yellow roses. The most superb of the whole series is *Gloire de Dijon*, which is so hardy that it thrives at Aberdeen; and at the Temple Gardens, in the city of London, it blooms as freely as *Géant des Batailles*. This is one of the robust growers, with fine bold foliage, the flowers very large and double, the colour a charming combination of pale cinnamon, buff, and yellow. The following are the hardiest and most vigorous growers of this family:—*Adam*, flesh, with salmon centre, superb. *Abricote*, pale fawn, with deeper centre. *Comte de Paris*, pale flesh, large and full. *Devoniensis*, creamy white, most elegantly folded in the bud, rarely suffers from frost, and is one of the loveliest roses known. *Frageoletta*, pale rose, rather loose and thin, but valuable for its free habit and hardiness. *Gloire de Dijon*, excellent for standard, wall, or pillar. *Leveson Gower*, rosy-salmon, large and full. *Maréchal Bugeaud*, bright rose, large and full. *La Sylphide*, cream, tinted with carmine, very hardy. *Pactolus*, lemon with pale yellow centre, one of the few reliable hardy yellows. *Safrano*, bright apricot, most beautiful in the bud, foliage quite grand. *David Pradel*, rose, tinted with

lavender, a curious colour. The flowers occasionally acquire an enormous size, especially if only the top buds are allowed to expand. *Barbot*, cream-tinted rose, will make a good pillar. *Narcisse*, pale yellow, and with much of the Noisette character, makes a charming half-standard. *Niphetos*, pale straw, the buds long and pointed, flower fine when expanded, makes a nice standard, but requires dry weather to bloom in perfection. *Sombreuil*, pale straw, a strong grower, makes a fine standard. Among the choicest of the tender roses of this series, *Souvenir d'un Ami* should certainly have the first place. In my rose-house, this frequently produces flowers so large that it is impossible to insert one within the mouth of an ordinary sized breakfast cup, the circumference when fairly expanded and in full prime being eleven to twelve inches. These large flowers are obtained by removing, as soon as they appear, all except the top buds of strong shoots. It matters not how large these roses are grown, they never become coarse, and it is worth while therefore to disbud for the chance of something extra. *Souvenir d'Elise*, which is a curious mixture of cream and salmon, is another magnificent variety, the petals thick and most symmetrically arranged, and the flower having a grand individuality which it is impossible to describe. This needs the assistance of copious waterings, alternating with liquid manure, from the time the buds become visible till they begin to expand. If it has

not this help, it is apt to show a hard green centre. It is quite unfit for out-door purposes. *Vicomtesse de Cazes* is a fine yellow rose, wanting in substance and symmetry, yet free blooming, and a beautiful object when at its best. This is very tender, and needs the greenhouse. *Julie Mansais*, creamy-white, a lovely rose for growing under glass. *Duc de Magenta*, pale flesh, tinted with fawn, is one of the grandest. *Madame Falcot*, orange-yellow, fine thick petals, but the flower scarcely full enough. *Madame Willermoz*, creamy-white, tinted with fawn, thick petals, superb. *Souvenir de David*, rosy-salmon, is the last we shall name here. It is deliciously fragrant, and a fine rose for conservatory culture.

22. NOISETTE ROSES.

L. Rosa Noisettiana. F. Rosier Noisette.—This group is very much mixed, so that many of its members differ greatly in character, and appear to have little or no affinity with each other. The original Noisette was first grown in America by M. Phillipe Noisette, and sent thence to his brother, M. Louis Noisette, of Paris, in the year 1817. This rose, called “Noisette’s Blush,” attracted the admiration of the Parisian amateurs, and became thenceforward the type of a new race. The majority of this group are the results of crosses of the Musk with the Tea-scented China. Hence many of them are rather tender, and only adapted for walls and other posi-

tions, in which they will enjoy some amount of shelter. A considerable proportion of the Noisettes entered in the trade lists are literally worthless, but on the other hand there are some that will continue in favour as long as the rose itself shall continue to be the subject of human solicitude, and a ministrant to human pleasures. *Aimée Vibert* is the most popular of all, and deservedly so. It is a moderate grower, and naturally throws out its shoots obliquely, so as to form a diffuse spreading head when grown as a standard. Its small glossy rich green leaves, and its myriads of small snow-white flowers, render it a general favourite, and that is a miserable collection indeed in which *Aimée* has no place. *Miss Glegg* only differs from the preceding in having a slight tint of rose. *Jeanne d'Arc* is an exquisitely-formed rose with a decided Tea character, pure white, and very vigorous in habit, makes a fine pillar. *La Biche*, white, with flesh centre, is a fine rose for standard or wall. Among the bright colours, *Fellenberg* must take precedence. This is a peculiarly lively rose. It is the very emblem of cheerfulness, and the sight of a fair-sized plant covered with little rosy-crimson blossoms would soften the temper of the most obdurate of all human bears. It is not a vigorous grower, but very hardy, remarkably prolific of bloom, and produces its branches obliquely, so as to form an almost decumbent bush on its own roots, and a spreading head as a standard. *Beauté de*

Grennemont is much like *Fellenberg*, and as good. *Euphrosyne*, *Eclair de Jupiter*, and *Woodland Margaret* are nicely coloured in shades of rose and crimson, but of inferior character. *Vicomtesse d'Avesne* has pretty flowers, of a mauvy-rose tint, but its stiff habit and ragged appearance renders it unworthy of a good place, though well worth growing to supply cut flowers. *Triomphe de la Duchere* is a vigorous grower, with lovely rose-coloured flowers; it is, however, rather shy, and certainly far from being first-rate in character. *Caroline Marniesse* is an execrable white, with a tinge of pink in the centre. *Ophirie* is one of the most beautiful for a standard or archway, producing myriads of small copper-coloured flowers in dense corymbs. The remaining members of this group—that is to say, worthy of notice—are among the finest of yellow roses, and are treated of at length in the chapter on yellow roses.

23. THE MUSK ROSE.

L. Rosa moschata. F. Rosier muscate.—Whenever the literary history of the rose shall be written, the Musk rose will furnish the subject for many entertaining chapters on Feasts of Roses, oriental fables of the companionship of the Rose and the Nightingale, and the sober precepts of morality and religion that have been propounded by the sages of the East. Probably many species and varieties of roses are used in the oriental festivals, but the Musk

rose is undoubtedly that which gives its characteristic hues and odours to the celebrated "Gul Reazee," or "scattering," which forms the subject of many a Persian lay, and is introduced with the most refined taste in the last and lightest and fancifulest of the stories in Moore's great poem, "Lalla Rookh." It is impossible, indeed, to make even the slenderest acquaintance with oriental romance without observing that the Musk rose is a truly classical flower; less famous than the Lotus, because less associated with superstitious rites and transcendental analogies; yet in another sense more famous, because more completely associated with the industry and pleasures of the people. It is probably the "Gul sad berk," or rose of a hundred leaves (*Rosa centifolia*), which furnishes the principal part of the otto, or attar, which is so celebrated in eastern commerce; but in many districts the Musk rose takes its place, and acquires an equal fame as a source of wealth with that it otherwise enjoys as a source of imagery, allegory, and fanciful satire. According to Forster, the roses of Kashmire are the most celebrated in the East for brilliancy of colour and delicacy of odour, and thence we are wafted by the light-hearted poet to witness the festival of the scattering:—

"Who has not heard of the Vale of Cashmere,
With its roses the brightest the world ever gave;
Its temples, and grottoes, and fountains as clear
As the love-lighted eyes that hang over their wave?"
Moore's "*Light of the Harem*."

The supposed association of the rose and the bulbul, or nightingale, forms the subject of a thousand gay fancies and pictures and dreams. Jami says, "You may place a hundred handfuls of fragrant herbs and flowers before the nightingale, yet he wishes not in his constant heart for more than the sweet breath of his beloved rose." In the second part of the "Veiled Prophet" occurs that well-known and exquisitely musical and tender lyric—one of Moore's happiest efforts :—

"There's a bower of roses by Bendemeer's stream,
And the nightingale sings to it all the day long ;
In the time of my childhood 'twas like a sweet dream
To sit in the roses, and hear the bird's song.

"That bower and its music I never forget,
But oft when alone, in the bloom of the year,
I think, Is the nightingale singing there yet ?
Are the roses still bright by the calm Bendemeer ?"

Having indulged a spirit of discursiveness so far, let us wind up this part of the subject with a genuine Persian fable, which may any day be used to illustrate the Scripture text, "A little leaven leaveneth the whole lump." A traveller, in passing through a country in Persia, chanced to take into his hand a piece of clay which lay by the wayside, and to his surprise he found it to exhale the most delightful fragrance. "Thou art but a poor piece of clay," said he ; "an unsightly, unattractive, poor piece of clay ; yet how fragrant art thou ! how refreshing !

I admire thee ; I love thee ; thou shalt be my companion ; I will carry thee in my bosom. But whence hast thou this fragrance ?” The clay replied, “ I have been dwelling with the rose.”

The White Musk is one of the famous old English roses, quite uncared for by our amateurs, but much prized in many a cottage and farm-house garden.

This is a free-growing rose, the flowers of which exhale a delicious fragrance in the cool of the evening, and thus very appropriately adapt themselves to the fancies of the poets, who picture it as the favourite flower of the nightingale. *Princesse de Nassau* and *Rivers's Musk* are vigorous-growing varieties, blooming in clusters, the flowers of a creamy-buff colour. The treatment required by these roses is that recommended for Noisettes, which they closely resemble both in their habit of growth and style of blooming.

24. MACARTNEY ROSES.


L. Rosa bracteata and *microphylla*. *L. Rosa microphylla*.—In 1795 Lord Macartney brought from China the first specimen of *Rosa bracteata*, a pretty single rose, with evergreen and glossy foliage. From this a few varieties have been raised, bearing the general designation of Macartney roses. Among the best of these is *Rosa berberifolia Hardii*, a hybrid between a variety of *bracteata* and the single yellow Persian. This is a rather tender yellow rose, with

evergreen foliage, worthy of culture in the greenhouse or orchard-house. *Maria Leonida*, with delicate blush flowers, is tolerably hardy, and is a pretty rose for a rockery or bank in a sheltered position. Another group, known as *ROSA MICROPHYLLA*, the small-leaved rose, introduced from China in 1823, bears such close resemblance to the Macartneys, and is so generally believed to be one of its hybrids, that it may very properly be included in the same group. Of the Microphyllas, *Rubra plena*, deep red, with prickly calyx, and *Rugosa*, with fine large crimson-purple flowers, are the only kinds that are worthy of attention. To do justice to these roses—which are in their way truly beautiful—they must, if grown out of doors, have a warm wall and a dry border. They require scarcely any pruning, and grow with vigour, though not to a large size. When grown under glass, their beautiful evergreen foliage is preserved in all its proper freshness, and adds very greatly to their value. To improve this race should be the object of every genuine lover of the rose.

Chapter III.

Forming the Rosarium.

FORMING THE ROSARIUM.

ROSES, like Conifers and Rhododendrons, are remarkably well adapted for planting in gardens, or portions of ground appropriated to them exclusively. Such an appropriated piece when planted with roses is called a Rosarium, and the form and proportions best adapted to display the beauties of the rose are matters which it requires considerable experience and taste to determine. An open breezy position, if not exposed to keen blasts, is undoubtedly to be preferred to a position shaded by trees, or in close proximity to large buildings. To lay out the ground is then a matter for the ingenious designer of garden scenes, to whom we assign the task, desiring him to bear in mind these few simple and general instructions. The ground must be well drained, and every other kind of earthwork thoroughly well done. All sudden transitions from a general dead level are to be avoided, mounds and banks are allowable and proper, but all slopes should be easy and moderate, or the roses in the raised compartments will lose the best effects of the summer rains. The greatest simplicity

of design should be aimed at, for roses are not at all adapted to fill beds that twist like corkscrews, or that are sprinkled over a piece of turf like the holes in a colander. Fifty roses in a batch may look fine, but ten clumps of five each may have a very paltry appearance unless the rosarium is on so small a scale as to be beyond the reach of criticism. Remember to arrange the beds as much as possible, so that the cultivator can at any time get at any particular plant without having to push through a dense mass of thorny branches, to disfigure the ground with his footsteps, and perhaps break off buds and branches all the way he goes. Generally speaking, beds of five or six feet wide answer best, as when the roses are only four or five rows deep, every flower may be seen to advantage ; if deeper, they are only seen *en masse*, and the rose is too refined and noble a subject to be admired only in the multitude. In placing arches, bowers, pavilions, etc., take care not to crowd them so that there is any possibility of the view being obstructed. A few of these objects, at considerable distances apart, will have a much more satisfactory effect than the placing of them so close that the spectator can only see them at a sharp angle. A rosarium should be in some way enclosed so as neither to be overlooked from any other part of the ground, nor to admit views of other parts of the ground from it, except it may be from the central temple or other *point de vue*. A small rosarium may

be separated from the rest of the pleasure ground by being formed in a sunk panel, with sloping bank of turf all around. But when carried out on a large scale a close hedge is requisite ; for this hornbeam or beech will be suitable. Clipped yew will have the grandest effect, and bring out the colours of the roses to perfection.

The frontispiece is a design for a rosarium. If I had to carry such a design into effect I should construct four large covered entrance ways, over which would be trained luxuriant growing climbing roses. The boundary would be of common or Irish yew, the latter preferable, but most expensive. Within this boundary a broad gravel walk all round. This should be ten feet wide, and on a dead level. Within this walk a ten feet circle of grass turf with standard roses of uniform height all round. To get to any of the short cross walks in order to proceed towards the centre, we should prefer to walk across the turf rather than break its continuity with any intersections of gravel ; therefore proceeding across this grassy ring we come next to a circular walk arched over throughout with climbing roses, or bounded on both sides with roses trained to chains. This walk should be ten feet wide if arched over, but if open and bounded on each side with roses on trains, it might be, like all the open walks within, five feet wide. Within this we should have a series of eight beds ten feet wide, intersected

with cross walks, arched over with climbing roses. These beds would be appropriated to China roses, which would be gay with bloom from May to December. After this, still proceeding towards the centre, we have a succession of walks and beds, each five feet wide, all the cross walks arched over, and the arches covered with climbers. All these beds to be planted with named roses in groups, and the whole grown as dwarfs. The centre to consist of a mound of about ninety feet diameter, with walks entered by archways, which would divide the mound into compartments, and give access to the temple on the summit. All these compartments to be appropriated to China roses, each compartment consisting of one kind only. The temple would afford sites for a few pillar roses, and a position from which the whole plantation could be viewed to advantage. If carried out according to these measurements this rosarium will occupy a space of ground 260 feet in diameter, or nearly one-third of a statute acre.

Chapter IV.

Culture of Roses in the Open Ground.

CULTURE OF ROSES IN THE OPEN GROUND.

THE rose is as luxuriant in its habits as in its beauty. It will not be starved, and it will disdain shabby treatment of every kind. It thrives in greatest perfection on a deep, strong, well-drained loam, and that must be liberally enriched with thoroughly-decayed manure. As the rose is somewhat of a gross feeder, any of the stronger manures may be advantageously employed in its cultivation: pigs' dung, night soil, superphosphate of lime, and stable dung; fresh manure should never come in contact with the roots. The dung must be well rotted and perfectly sweet, and it must be thoroughly incorporated with the soil before the roses are planted. But it does not follow that even if the soil of the garden is a deep strong loam, that therefore roses are sure to succeed on it. Leaving out the questions of aspect and climate, it is more a matter of actual experience than calculation as to whether roses will flourish in any particular spot, however well the soil may appear fitted for them. The roses must be tried on the soil, and until actual experience has proved its fitness for them, choice

expensive kinds should not be planted in it. This point, however, is not often a difficult one to settle, for the mere observation of the condition of roses in neighbouring grounds, where the soil is of the same character, will generally determine what may or may not be done. But the fact should not be lost sight of that there is no mode of prejudging by the mere texture, depth, or character of the soil, even in conjunction with climate and situation, to what extent the spot is adapted for rose culture.

But supposing that you possess a deep strong loam, the first point is to ascertain the state of the drainage. Though roses are as fond of water as any of the choice garden plants we have, they will not endure to have it stagnate about them. The continuous winter rains lodging in a tenacious soil ruin them at the root, and devastate the collection; and unless there is a good natural drainage, means must be artificially devised for carrying off quickly all superfluous moisture. In laying out a rosarium the proper drainage of the soil would be the first consideration, and an efficient arrangement of drain-pipes would be the best mode of effecting it, unless, as just remarked, the sub-soil was of a character such as to render artificial drainage unnecessary.

Supposing the soil to be unsuitable, there would be great caution necessary in making the selection; and however carefully the selection may be made, it will still be necessary to improve the soil by any

means available. The top spit of a pasture, especially of a loam inclining to clay, would be just the thing to cart into the compost yard, and lay up for roses. If turned once or twice for a season, and then incorporated with a liberal allowance of well-rotted stable dung, or the clearings from cucumber and melon pits, or with dung from a sheep walk gathered six months previously, it would form an admirable material in which to cultivate roses. This would have to be used according to the nature of the land requiring improvement. On a soil unfit for roses, merely because exhausted and poor, a layer of six inches turned in would perhaps be sufficient, especially if every year afterwards the plants had a dressing of dung ; or if a few roses were wanted on a lawn in a soil too lean or hungry for them holes might be dug two feet deep and two feet across, and filled up with such soil, and the roses planted in them. In any case the soil ought to be brought to such a condition as to be fit to grow wheat or hops, and a good wheat soil is the very stuff in which roses are pretty sure to delight themselves and their proprietors.

When the utmost has been done to improve the soil, it may still be quite unsuitable for many of the choicer kinds ; and where there is any reasonable cause for doubt it would be rash to plant extensively, and especially with expensive sorts. In fact it is not possible to decide to what extent roses may

be grown on even the best soils until the thing has been tried, and therefore on one which bears the appearance of unfitness, let actual experiment determine before you risk much in the adventure. Many roses will make a good start in soils quite unfit for them, and when the first flush of youth is over they sicken and become worthless, or die outright; and on the best of soils for general purposes there are some sorts that refuse to make themselves "at home." Where *Gloire de Rosamene* does well you are pretty sure to find that *La Reine* turns consumptive, and *vice versa*. *Mrs. Elliott* is another that you cannot make sure of at all times, let the soil be what it may; nevertheless, in spite of such exceptional cases, those who love roses should take heart and wise counsel, and persevere cautiously, and there are but few spots in the whole area of the British isles where skill and patience will not succeed.

In the planting of a dry sand with roses those worked on *Brier stocks* are pretty sure to fail, for the dog rose demands a cool, moist, rich loam: sand, or any kind of loose shifting soil, it abominates. Here it is that roses on *their own roots* or on *Manetti stocks* prove especially valuable. Hybrid Perpetuals on their own roots are very accommodating, and when an uncongenial soil has been made the best of, those are the roses to risk upon it. Indeed, wherever there is a doubt about the suitability of a soil, roses on their own roots are to be

preferred ; for those that are worked are in an artificial condition, and less able to battle with adverse influences than such as from head to foot are "all of a piece," and carry their sap in continuous currents, the warfare between stocks and inserted buds being often greater than appears for a time, and even if trifling and of no moment when all external influences are favourable, every unfavourable circumstance aggravates it, and a bad soil most of all.

The other extreme of a heavy, wet clay bottom is to be met by an opposite practice in planting. Dog roses bear the effects of a wet bottom better than choice roses on their own roots, and if worked with strong-growing roses that otherwise would not survive on such a soil, the strength of the stock and its love of moisture will enable them to endure it ; and Cabbage roses on their own roots will be the best kinds for dwarfs, because they also can fight against stagnant water better than most other kinds. Still, if you want roses to flourish and to last you must secure the best possible drainage, and provide two feet of rich, strong, hearty loam for every rose root you intend to plant. They like to bite the ground firmly, they like good living, and the only royal road to the rosery is in securing as far as possible the conditions which experience proves to be requisite.

As to situation, roses bear exposure well, and

they like sunshine. A south-east aspect is the best, and it is advisable, if possible, to protect them from the cutting east blasts that tell so severely against vegetation of all kinds in early spring. In open grounds, beech, yew, or hornbeam hedges are good screens; but roses do not bear the drip of trees well, and need a full circulation of air about them to keep them healthy.

AUTUMN PLANTING.

The best season for planting is the early part of November, but when it is not convenient to plant them, they may be safely put in as late as March. I have frequently moved roses late in April, and have had them break well at the beginning of June, and get hearty in time to be gay all through the autumn; but there is nothing like early planting, it is the only safe course; and, whenever planted, they should be kept out of the ground as short a time as possible. Quarter-day has a good deal to do with gardening matters, and the wise gardener, when "on the move," fixes on Michaelmas as the safest season for the transference of his stock. At that time roses of all kinds may be transplanted safely, even though full of leaf and covered with bloom; but they should be first pruned in closely, and the branches that remain should be disleafed. I have seen roses moved at the end of August, being first pruned and stripped bare, and do well, but

November is *the* season; every week before or after that time is too soon or too late for the insurance of a good result.

When roses are ordered from a nursery, everything should be ready for their proper planting as soon as they come to hand. If they have been some time out of the ground, make a puddle of earth and water, of the consistence of paint, and as you unpack them dip each root into the puddle, and plant immediately. You will, of course, have already determined how they are to be arranged in the ground. In a long narrow border, the tallest standards will form the back row, the next size will stand before them, the half-standards before those again, and the dwarfs in front of all. Choose a fine day for planting, if possible, the drier the ground the better; if the soil is loamy, manure it well, if otherwise, make holes two feet deep for every plant, and fill each hole with two-thirds turfy loam, well chopped up with one-third rotten dung (previously prepared for the purpose, of course), and plant in that. Roses on their own roots like the soil a little lighter; the China and Tea-scented roses especially prefer a soil containing abundance of vegetable fibre, and a good dressing for them is a mixture of peat, leaf mould, and burnt earth, and thoroughly rotten stable dung.

In planting brier roses examine the roots carefully, and remove all suckers and cut away with a clean sharp knife every portion of root which has

been injured, and, above all things, do not plant them an inch deeper than they were before; the more the roots can be kept near the surface the better. On the other hand, in planting Manetti roses, put them so deep that the junction of bud and stock will be at least two inches below the ground line. If all things are well done, the roses will flourish for many years without need of change of soil; but, with the greatest care, sometimes dwarf Bourbons, Tea-scented varieties, and China roses will fall back and get unhealthy, when the only remedy is to take them up in November, shake all the old soil off them, and replant in fresh compost, after searching the roots well, and cutting away all suckers and decayed portions. If any grow too vigorously, root-pruning may be adopted. Take a sharp spade, and cut clean down all round and under the plant in a circle eighteen inches from the stem, and reduce slightly the annual dressing of manure.

Early in spring, just as the roses begin to break, fork over the surface, and remove the top soil round each plant, and lay down a thin layer of manure as a top-dressing, over which draw the soil that was removed to make room for it. Most perpetuals will be benefited by another similar dressing immediately after the first bloom is over; and if the weather should be dry, two or three good waterings should be given, to carry the soluble parts of the manure down to the roots. Where it is not convenient to

give such a dressing, as on lawns for instance, liquid manure should be used a little stronger and more frequently just after the first bloom, but weaker and continuously till the middle of August. At the time of planting, every rose of two feet high and upwards should be secured to a stake.

SPRING PLANTED ROSES.

It is also true that roses may be planted on any day in the whole year, provided it does not happen to be a day when the thermometer is at either maximum or minimum. On a blazing hot day in July, when the ground is parched, and the atmosphere so dry that the leaves of established trees hang like rags from the branches, would be a very unfit time to disturb the roots of any rose, unless it could be kept rather dark and damp for some time afterwards. So, when the earth is so hard frozen that the roots of a rose are only to be got at by means of a pick, it would be best to leave the rose alone and wait for a more fitting season. But, guarding against extremes of all kinds, it is true in a general sense that roses may be planted at any time, and of that general truth I shall give illustrations hereafter. For the present it will suffice to say that roses planted in spring will do well, provided they are planted properly. We have planted roses as late as May, and had a good bloom the same season ; but in such cases they had the help

of frequent syringing ; if the weather was dry they had water at the root ; they were also aided by a good mulch to prevent evaporation from the soil, and they were taken up and replanted so quick, and with care to avoid injury to the roots, that they suffered the least possible amount of exhaustion by the exposure of their roots to the atmosphere. But for general purposes standard and bush roses from *open nursery quarters* may be planted in February and March with the certainty of a good growth and an abundant bloom. My reason for emphasising the words " open nursery quarters " is this,—that I have known instances of amateurs ordering, during February and March, yearling plants in pots, and proceeding at once to turn them out, and the consequence was that the greater part perished, and those that escaped death scarcely grew at all till June, and then made a very poor show of flowers. Plants from the open ground are so hardy that their removal is the only shock they have to bear at whatever season they are planted. But plants turned out of pots have been previously enjoying the protection of pits—perhaps the warmth of a greenhouse, for at the nurseries these little roses on their own roots or on Manetti stocks are kept constantly growing, and it is the business of the purchaser to harden them off, and prepare them for use out of doors, and their sudden transference from a warm and close atmosphere to battle with wind,

frost, and damp is a process of hardening too severe for them, for it is only after a long exposure and the advantage of a free growth during at least one summer that the rose acquires a Spartan constitution. Therefore, those who form their roseries by planting small plants from 54 and 60-sized pots, must wait till the end of April or beginning of May before they plant; but they ought to secure the plants some weeks previously, and keep them in pits and frames well aired, and for a fortnight before planting expose them to all weathers without in any way disturbing their roots. After such a preparation, they may be planted out, and the season being then advanced sufficiently to secure them against attacks of frost, they will at once take to the soil, and grow with their proper vigour.

Respecting the planting of roses from open quarters, a few important points should always be kept in view, and first of all let the arrangements be such that the plants will be kept out of the ground as short a time as possible. It is an almost deadly injury to a rose to have its roots exposed for any length of time to the atmosphere. If they come to hand properly packed, they will on arrival be found to have their roots well covered up and still quite moist. Unpack them at once, prune away all bruised portions of roots, and shorten any extravagantly long roots, and then dip their roots in a puddle consisting of cow-dung, clay, soot, and

water, of the consistence of paint. Then proceed to plant them; put none of them in the ground deeper than they were before, in fact, never plant a rose of any kind, except a Manetti, deeper than is needful to cover its topmost roots with about two inches of soil, and tread them in firm. To do the work properly, the ground should be tolerably dry. If the ground is in a wet pasty condition, lay them in by the heels, and cover the roots with loose earth until the soil is in a better condition for planting. Better for them to lay in by the heels a fortnight or three weeks than be planted while the soil is in such a condition as to tread into a cement. I have frequently been compelled to plant roses with the ground in such a state that I could not allow them to be trod firm, in which case the workmen have been required to keep their feet in the mid spaces between the rows, and putting each tree in its place, throw the earth on lightly, put rough stakes just to keep the trees from being blown out by wind, and so they have been left till after some days of dry weather. it became possible to tread them in firmly, and point over the trodden ground with a fork, and finish all off neatly.

A CAUTION FOR BEGINNERS.

It is only by seeing how things are done in various places that it is possible to learn what sort of advice to give amateurs on various gardening

subjects, and on the subject of planting roses, I remember a notable case of failure which will illustrate the importance of the remark just made on treading the roots in firm. A gentleman fond of roses sent for me to have a look at a plantation which had cost him a large sum of money only to give him vexation, and make the best piece of ground in his garden a specimen of utter failure. He had purchased yellow loam of admirable quality at about a guinea a load, in order to give the roses such a soil as is recommended in the books; he had purchased manure in quantity at six shillings a load; and lastly, paid seven pounds per hundred for a fine lot of dwarf Hybrid Perpetuals. When I saw them in the month of June they looked so miserable I could scarcely avoid laughing outright; but I preserved my gravity and looked about for leaves and flowers. A few of both were to be seen, but the leaves were more black than green; the few flowers were small, ragged, thin, and positively obnoxious to look upon. The plants had a starved look, and the general tone of the whole piece was that of a mass of blackish-green scrubby sticks, much like the vegetation one sees on the banks of the Tyne where coal-smoke influences the shrubs in a way which makes one regret it does not quite kill them. The owner had planted them with his own hands; he had pruned them admirably, taking his method from the garden journals; and he had prepared for them a soil in

which roses might have been grown to take first prizes at any flower show. But alas! he had planted them so loose that I could take hold of a bush with the hand and draw it out as one would a radish on a wet day. What was to be done? The remedy was simple enough. I began with one bed, trod it all over backwards and forwards, made the soil as firm as a pavement, and recommended that all the rest be served in the same way, and then the beds to have about two inches of half-rotten dung spread all over them. I saw no more of them that season, but the June following I called in to have a look at the roses, and they were one mass of healthy green foliage and thumping flowers. Thus, you see we may do right in all things but one, and the omission of that one, or the doing of that one wrong, may make a wreck of our enterprise.

PRUNING, DISBUDDING, AND SEASONAL MANAGEMENT.

Any one who takes note of the varying habits of roses, and the manner in which they produce their bloom, will soon acquire, as if by instinct, a clear insight into the art of pruning. Supposing, in the first place, that you have young plants from the nursery in the first year of planting, you must prune them very close to induce equal growth and the formation of neat bushy heads. Almost all kinds, the first season, require shortening to two or three buds, and the buds left should be those that are

well placed for the summer growth, having an outward direction, and as symmetrically placed in situation to each other as possible. All weak and unnecessary shoots should be removed, and the head left open, and with its remaining buds so placed that the summer growth will be regular and close, spreading from the centre. The reason why roses are not pruned in winter, as many trees and shrubs are, is, that pruning hastens the starting of the buds left, and if these break too early, they are apt to suffer from frosts, and the plants are for a long time weakened, and the blooms come late and poor; hence autumn and spring are the principal seasons for such work.

As the spring growth proceeds, the cultivator must occasionally look over the stock for the purpose of disbudding such as require it. Every bud or shoot not taking a proper direction should be rubbed off as soon as it appears, and if shoots cross each other, or make way into the centre of the plant, they should be cut close off, and the well-placed shoots will grow all the more vigorously, and the blooms be finer and more abundant.

In the spring-pruning of established roses, the first thing necessary is to thin out from the head all the small and unripened shoots, and such as have grown irregularly, leaving the strongest at equal distances from each other; the shoots of strong-growing sorts may be thinned to four or five inches

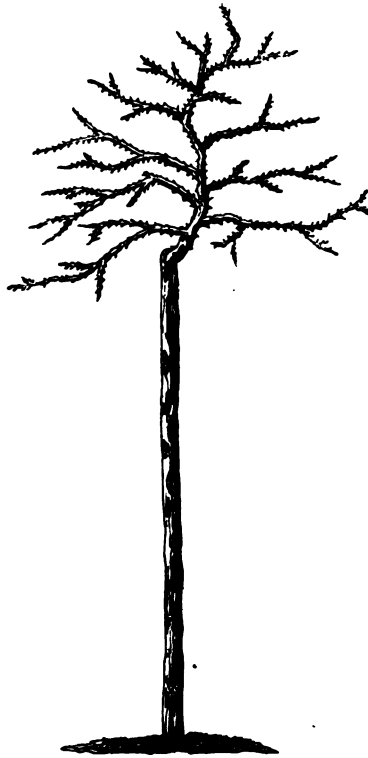
apart, and the best shoots left from six to twelve inches long, according to the age of the plant, its habit of growth, and the strength of the shoots cut in. The weaker the shoot, the closer it must be cut, and the weaker the plant, the fewer shoots must be left to consume its sap ; and every cut should be made back to a strong well-placed bud. The shoots that are entirely removed must be cut clean away at their base, and the wound will heal over during the summer. February and March are the seasons for the spring pruning, and the more tender the variety, the later must the pruning take place. Tea-scented, China, Noisettes, and Bourbons must be deferred till April ; but French, Moss, and Provence may be pruned early ; Hybrid Perpetual and Hybrid Bourbon next ; and the tender kinds last of all.

The summer pruning must be done cautiously, for severe pruning at a season when the sap flows freely and abundantly will give such a shock to the plants as to cause them to throw up suckers or joints from the stock below the head, in an effort to get rid of the superfluous sap thrown upon the root by a too sudden removal of growing branches. Suppose some of them produce long rods disproportionate to the character of the tree—a thing that will frequently happen to vigorous plants in good ground—it would be unwise to cut such branches close off, but you may nip out the points of such shoots, and let them remain till autumn, and then

cut them clean off. If the growth is regular and crowded, thin out at once such shoots as seem superfluous, cutting them clean to the base, but do not stop any of those left, or they will be likely to throw out a good deal of side-spray that will soon cause the trees to be as crowded as before, and, beside that, the next season's blooming will be prejudiced.

We come now to autumn pruning. This must be performed in a regular business-like manner; it is to be no mere trimming and shaping up, as much of the summer pruning is, but a definite adjustment of the wood that is to remain for the next spring's growth. All summer roses, as the Moss, French, Provence, and Damask, must be regularly thinned out, and, according to the character of each variety, the shoots should have from four to six eyes each. Most of the French roses are strong growers, and frequently make long rods that are green and pithy, which should be cut clean out, and the remainder of those best ripened to a foot or more, according to their strength. Perpetuals, whether Damask, Hybrid, or Moss, should have a third of the shoots cut clean away, and the rest shortened to four or five eyes; the shoots removed should be those that are ill-placed, weakly, or of too rampant a growth for preserving the general symmetry of the head. A few of the early-blooming and hardiest varieties may be pruned as late as November, and

they will bloom a week earlier than those pruned in spring. The cut represents a standard pruned to form a compact, symmetrical head.



Weeping roses which are worked on tall standards require little pruning. The best varieties for Weeping roses are the *Ayrshires*, *Boursaults*, and *Semper-*

virens ; when well done in the nursery they fit their stocks well, and the latter increase with the progress of the head, and throw up very few suckers. For the first year or two these should be trained down to a small iron hoop, to give them a pendulous form, and the pruning will consist merely of shortening in any undue growths, and cutting out any unripe shoots, and leaving the vigorous growths at moderate and equal distances from each other.

So far much of the seasonal work is disposed of. Supposing them to start well after pruning, it will be necessary to keep a constant watch against insects, and to administer water plentifully during dry weather. As the "pests of the rose" demand a chapter, that part of the summer work will be dealt with anon, but the matter of watering must be at once disposed of. Roses are very thirsty, and hence it is a folly to plant them on mounds or raised banks, where the water will run away from them, and leave but little at the roots. Even on lawns where the carpeting of grass does much to preserve a moist bottom, it is frequently necessary to plant roses in sunk circular beds, to facilitate the conveyance of water to their roots, for without plenty of moisture they are but sorry things. To obtain fine and abundant blooms their roots must never be dry all the summer long, and liquid manure, weak at first, and the strength gradually increased, should be given once a week at least, as long as they are in a growing

state, but it should of course be discontinued in the autumn, to enable them to rest naturally. Soap-suds, house refuse well diluted, the drainage of cow-houses, stables, or piggeries, diluted with soft water, are admirable strengtheners; or if no such aids are attainable, throw two or three spadefuls of dung into a barrel of eighteen gallons capacity, fill up with water, and let it stand a day or two to settle, and use that and fill up again. After the second dose change the dung, and go on as before.


They like water overhead as much as they do at the root, and Read's engine is just the thing to refresh them with on summer evenings, when the operator will find as much delight in splashing the cool sparkling spray about, as the roses will in accepting it. It is just the sort of "odd job" to enjoy a cigar over, and if frequently resorted to, there will be the less need to hunt for insects, for, one and all, they hate water, and the more vigorous the plants, the less do they care to attack them. Lastly, do not forget when winter comes to mulch over the roots with well-rotted dung, and fork it in when the ground has its spring dressing. Give the Hybrid Perpetuals a second manuring as soon as the first bloom is over, and you may expect to realize a "feast of roses."

Chapter V.

Climbing Roses.



CLIMBING ROSES.

HE rose grower must never confound together the idea of a climbing with that of a pillar rose, for the simple reason that they are very distinct in their characters, and to a great extent require different treatment.

Climbing roses may be grown on pillars, and *vice versa* ; but a genuine climber is not best adapted for a pillar, nor is a genuine pillar rose best adapted for a trellis or wall. But as the leading principles of their respective cultivation agree in some points, and as for decorative purposes they very closely assimilate, there would be a strict propriety in considering them together, if we could afford room to do so, especially as the treatment needed by one would serve to illustrate and explain that necessary for the other. As a rule, fast-growing roses, of pendulous and rambling habit, such as *Boursault* or *Rampante* for instance, make the best climbers ; but these generally produce inferior flowers, though when seen *en masse* their appearance when in full bloom is delightful. But for pillars varieties of the highest floral excellence may be chosen, such for

instance as *Jules Margottin*, or *Mlle. Haiman* and others, which bear inspection individually, and exhibit characters consistent with the important and conspicuous places assigned them. Bearing these differences in mind, let us consider now the uses and abuses of climbing roses.

The object first sought is to cover the wall, trellis, or arch quickly, but not with such haste as to prejudice the future well-doing of the tree. For all the better class of climbers the first thing requisite is to prepare the soil, so that when planted they will have every help to free growth. No matter what the position or the circumstances in which the roses are to be planted, the soil should be deeply stirred and liberally manured some time before planting takes place. For these roses are hungry, and if starved the shoots get hard in the bark, and are reluctant to make side-shoots; and instead of making a vigorous growth at one effort there is a succession of spasmodic efforts at growth all through the season, especially after rain, that prevents the formation of flower-buds. But for Ayrshire roses no great preparation is necessary, unless the soil happens to be a poor peat, sand, or chalk, in which case some good loam must be introduced at the stations where they are to be planted. In nearly every case of planting climbing roses, plants on their own roots are to be preferred. If not on their own roots, they should be on short brier stocks.

Some kinds seem to do as well budded as on their own roots, and for the first year or two grow quicker. I remember once covering a great breadth of wall with one plant of *Grevillea* in three years, the plant being worked on a brier about six inches from the ground ; and another plant on its own roots, in a similar position close by, had not made more than half that growth in the same period ; but after the third year, there was no great difference between them.

Like other roses they may be planted at any time between November and March if they have been previously growing out of doors, and as many of them are precocious in their movements in spring, autumn planting is to be preferred. But in any case of planting out of pots, if the plants have been sheltered or grown for some time under glass, it will be best to wait till April and then turn them out carefully, loosening the ball of earth, but not stripping their roots entirely.

It will depend entirely on the varieties planted, how they are to be dealt with from the day of planting. *Ayrshire* and *Sempervirens* roses require very little pruning at any time, whether in youth or age ; but *Boursaults*, *Rosomenes*, *Teas*, and *Noisettes* require careful pruning to insure a regular distribution of the flowering wood, and prevent increase of altitude at the expense of growth at the base. Any of these roses left to grow as they please will

soon become mere bunches of leaves at the ends of long naked shoots. It is the business of the cultivator to prevent this. If the plants are strong when planted in autumn, tie them in sufficient to keep them safe against wind, and so leave them till spring. At the end of February cut them down to within two eyes of the base of each shoot, and on no account begin with more than three shoots to each rose. The object of deferring cutting down till the spring is to prevent the premature starting of the buds at the base, as if there comes a sharp frost after mild weather those buds may be killed back after having grown a few inches, which would be a misfortune. From the three shoots supposed to be cut down there will probably start eight or nine shoots. Retain five of these, and cut or nip out the remainder as soon as you can determine which push the strongest; the weakest are to be removed. Supposing you have but one main shoot to begin with, cut it down to three, four, or five eyes, and from these form the plant. Train in all shoots regularly, never let them hang about, or the growth will be checked and they will flower prematurely. (When they are established they may be allowed to fall over if the position allows of negligent growth, and they will bloom the more freely for it.) At the next season's pruning, cut back all the shoots at least half their length, no matter what the length may be, and at the same time remove

any weak, or ill-placed, or imperfectly ripened shoots, leaving a bud at the base if another shoot is wanted in the place from which a poor shoot was removed. The next season cut back to a uniform length, but not severely, all the leading shoots, and shorten in very moderately all the laterals, and thenceforward prune very little, no more in fact than is sufficient to prevent crowding at any one place or the usurpation of the principal vigour of the tree by any one leading shoot. To keep a wall or trellis well clothed, it is needful to have an eye to the strong shoots that occasionally rise from the base. It will be well to allow one of these to rise every year, train it over the shoots that are already nailed in, and at the next pruning remove one of the old main shoots by a clean cut at the base, and let the young shoot replace it.

ARCHES AND TRELLISES.

If the summits and connecting chains and rods only require to be covered, plant climbing roses worked on tall stems and train their heads over, and only prune sufficient to regulate the growth. For this purpose those of the *Sempervirens* section are invaluable; and as they retain their leaves till spring, you have the advantage of verdure in winter with roses in summer. When in bloom they are magnificent, the clusters showing from a dozen to forty or fifty roses each. The deepest coloured rose

of this section is *Princess Marie*, reddish pink, the flowers nicely cupped, and produced in large clusters. The next brightest coloured is *Brunonii*, flowers of a lively rose, a brilliant object when full out, the plant less decidedly evergreen than the rest of the family.

The purest white of the race is *Mélaine de Montjoie*, which has rich deep green, glossy foliage. Another good white is *Rampante*, a tremendous bloomer. The most fragrant is *Banksiaeflora*, with straw centre, very double. But the favourite of the race is *Félicité Perpetué*, a remarkably rapid grower, with lovely foliage, and myriads of little globular creamy blossoms. There are many others, the best of which are *Spectabile*, rosy lilac, and *Myrianthes*, with beautifully formed rosy-blush flowers, most delicate and graceful in all its aspects.

CHAINS AND LOW TRELLISES AND DIVIDING SCREENS.

When worked roses are planted to run over the summits of arches and temples, the low trellises and chains connecting the principal supports of the arches may be covered with Hybrid Perpetual and Bourbon varieties, or with *Rosa de Rosomène*, which is very vividly coloured, and most profuse in bloom, though a poor rose when compared with any of the florists' varieties. Among the H. P. and B. sections, any of the vigorous growing kinds may be selected, and of Teas, *Gloire de Dijon*, *Amabilis*,

Homere, Adam, Frageoletta, Comte de Paris, Devon-iensis, and Maréchal Bugeaud. Of Noisettes, *Jaune Desprez, Ophirie, Triomphe de la Duchere, Aimée Vibert*; and of Musk roses, *Princesse de Nassau.* As the Teas and Noisettes are comparatively tender, the Hybrid Perpetuals and Bourbons will be found most generally useful for this purpose, and are to be preferred on their own roots.

BANKS, TREES, AND WILDERNESSES.

In wild scenes, and where truly rustic roses are required, the Ayrshires answer admirably, being of rapid wiry growth, and requiring only to be trained—if trained—the first season, after which they will take care of themselves, and festoon dead or living trees, ruins, gateways, and other rough elevations most gracefully and profusely. To start them well give every plant a square yard of prepared soil, consisting of good loam and one-third manure, or if the staple is clay, break it up and manure it without introducing loam, and if they have but a moderate share of daylight they will grow in the confusion of a glorious wilderness, and make good hold for themselves wherever they go. Ayrshire and Sempervirens roses furnish precisely the kind of materials needed for the banks of wilderness walks and for open spots in woodlands, and to clothe mounds and knolls where mere weeds would be obnoxious, and choicer plants out of place. Let the ground be well dug over and

manured, and then plant the varieties in masses of a dozen of one kind together, the plants five feet apart every way, and after that an occasional dressing of manure on the surface is all they require. Even that is unnecessary on good clay or loamy soils. Mr. Rivers tells how sixteen years ago he covered a steep bank of hard white clay next the high road at Sawbridgeworth with "Ayrshire and other climbing roses; holes were made in the hard soil with a pick two feet over and two feet deep; some manure mixed with the clay, after it had lain exposed to frost to mellow it, and climbing roses planted. This bank is, when the roses are in bloom, a mass of beauty. I have never seen anything in climbing roses to equal it" ("Rose Amateur's Guide"). The cruel winter of 1860 killed all those roses to the ground, and the bank had to be planted with shrubs. But in the summer of 1863, when I walked over that same bank with Mr. Rivers, the roses were breaking through the turf in all directions, forming distinct patches of crimson and orange foliage, and now they promise to recover the splendour they possessed in bygone years, and, like the leather bottle, which "may fall, but cannot be broken," so these may show that they have such a vigour of life underground that though frost may destroy all it can reach, it is powerless to kill them outright. There are not many varieties of Ayrshire roses. The best for general purposes is *Queen of the Belgians*, flowers

pure white, double, plentifully produced. *Ayrshire Queen* is the only dark one of this race, the colour purplish crimson, the habit less vigorous than the rest in this selection, yet it is not wanting in vigour. *Ruga* is a splendid rose, the flower large and double, and a delicate pale flesh colour. *Dundee Rambler* is the most vigorous grower of all, an almost double white, blooming in clusters, and superb in its way when in full bloom, a splendid rose for a ruin or dead tree. *Splendens* is white, edged with red, and only semi-double, and is desirable only where many varieties are required.

WALL ROSES.

All the foregoing may be turned to good account on walls, but as walls are good positions, they should be appropriated to the best roses that can be had for them. I shall never forget visiting my excellent friend, J. Brickwell, Esq., of Tottenham, who had the most perfect *bijou* of a rose garden I have ever seen, and seeing a great breadth of wall on one side of the dwelling house, which is fitted from the eaves to the ground line with a wooden trellis, completely covered with *Jaunâtre* and *Wistaria sinensis* freely intermixed, and one mass of bloom throughout; such a curious blending of fawn colour and bluish purple as one can only expect to see once in a lifetime. But I thought of this because I was about to remark how much better it is to have a wall fitted

with a trellis, to which the gardener will *tie* the roses instead of having to *nail* them; but instead of wood, let it be stout galvanized wire run through eyelet-hole nails. This plan preserves the wall, and is better for the roses than the nails and shreds.

The most splendid and certain of all wall roses are the Boursaults. They grow fast, are thoroughly hardy, bloom in immense clusters, and are truly gorgeous in the display they make, but they do not last long. To grow Boursaults well cut them down close at the first start, and after that merely shorten the seasonal growth, and thin out the weak spray and any soft or misplaced shoots, and they will never fail to be beautiful in their season. The Boursaults require a good soil, but the aspect is comparatively of little consequence. The best of these is *Gracilis*, which is a rapid grower and of pendulous habit, with handsome foliage. The flowers are of an intensely brilliant rose colour. *Inermis*, bright red, is a lively rose, and of most luxuriant habit. *Amadis*, with purplish crimson flowers, is a favourite about London. At Sydenham it appears to come by spontaneous generation, like an efflorescence of the brick walls. It is a truly deserving rose, and superb on a pillar.

In the Multiflora section we have the finest wall rose known, but which happens to be only fit for a south wall in the south of England, being unfortunately very tender. This is *Laure Davoust*, a rose

which claims admiration for its lovely foliage and large flowers, produced in immense clusters, the colour a curious mixture of lilac and blush. *Russelliana*, rosy lilac, is a trifle more hardy, but needs a south or west wall. *Grevillea*, or the *Seven Sisters* rose, is the best known of this class; and a superb rose it is, growing with marvellous rapidity, and if capable of enduring the climate, presenting a magnificent spectacle when in bloom, the flowers being in great clusters, and exhibiting various shades of rose, and purple, and deep crimson. I had a magnificent specimen of this rose worked on a brier stock on the front of my house at Stoke Newington, which the winter of 1860 destroyed completely. It is a troublesome rose to keep or grow, owing chiefly to its habit of beginning to push very early in the season, and its utter unfitness to endure those sharp frosts which invariably occur in this country just at the season when "hawthorn buds appear."


Banksian roses are of the same delicate constitution as the Multifloras, but where they can be grown, they are exquisitely beautiful. Travellers by the South-Eastern Railway may in the season have a feast of these lovely roses by keeping a look out after passing Croydon, as at several of the stations, Carshalton especially, the walls are covered with them, and they grow most luxuriantly, and flower in dense sheets of white and yellow uniformly from head to foot. Banksian roses require a rich,

dry soil, a warm exposure, safe shelter from east winds, as they bloom in May, when the weather is frequently as cold as in January; and in pruning, any long rods may be cut away, but the small side-shoots must be left their full length, or there will be no bloom. If they produce gross shoots late in the season cut them clean away in September, unless they are wanted to fill up gaps, in which case tie the shoot down to as nearly a horizontal line as possible. This will check the growth, and tend to its more perfect ripening. The next spring, it can be trained into the place where required. The best of this series is undoubtedly *Jaune Perin*, with yellow flowers of good size, that is for a Banksian; and *Fortuniana*, with double snow white flowers, also larger than the ordinary type of a Banksian. But the old white and less old yellow Banksian are beautiful in their way; and where Banksian roses can be grown without risk, these should certainly have a place.

Lastly, there are some useful hybrid climbing roses, partaking more or less of the characters of the preceding sections, which merit the attention of those who have occasion to use climbers in plenty. *Laure Davoust*, classed above as a Multiflora, is in reality a hybrid, though showing a predominance of the Multiflora character. *Menoux* is a very showy crimson rose, which makes a fine covering for an arch or portico. *Madame d'Arblay*, pure white,

flowering in immense clusters, is invaluable for its beauty and rapid growth. It is almost a *Semper-virens*. *Wood's Garland*, lilac and blush, sometimes opening white and changing to pink, is a free growing climber, producing fragrant flowers in large clusters, and in habit closely related to the *Semper-virens*. Prairie roses are of no use at all. The *Queen of the Prairies* will succeed in a few chosen spots, and is worth growing, though of very poor quality; but as it cannot be recommended for general use, and is quite unfit for the ordinary wear and tear to which roses must submit in this country, we can afford to dismiss it with the rest of its race as unworthy of further notice.

It frequently happens that after some years of good service roses on walls become poor and flowerless, and thus ceasing to be subjects of admiration, the few attentions formerly bestowed upon them are discontinued, so that when they most need help they obtain the least, as is often the case with those of our own kith and kin who have bestowed their strength in the service of mankind. The question will often arise how are aged wall roses to be rejuvenated, how shall we restore to them their wonted vigour, that they in return may present us with their wonted bloom? Usually the cause of decline in these roses is that their rapacious roots have exhausted the soil all around them of its nourishment; and they have become decrepit, not by age



but by starvation. The process of rejuvenating comprises two operations—a dressing of the soil, and a severe pruning. In the month of September open a trench in a semicircle, two feet distant from the stem of the tree, and remove from this the soil to the depth of eighteen inches, and to a breadth of two feet. At the same time remove some of the surface soil for the space of two feet round the stem where the soil has not been dug. Fill up the trench with a mixture of turfy loam two parts, and rotten dung one part, and lay over the roots, which have not been disturbed, six inches of half-rotten manure. In the month of March following cut the rose to within six inches of the ground, and that same summer it will throw up a new set of stems, and flower plentifully the succeeding spring.

Chapter VII.

Pillar Roses.



PILLAR ROSES.

THE best pillar roses are those that grow from six to twelve feet high, and produce flowers of a quality good enough for exhibition. If climbing roses are used, the flowers will be of poor quality, though there may perchance be plenty of them; and in the majority of cases the pillars will be less uniformly clothed, though they may have a certain picturesqueness, which only true climbing roses can impart to them. Climbing roses are unsuitable, because usually they grow too fast and free. A moderate growth with a superior style of flowers are qualities to be preferred in forming objects that are likely to be closely and frequently inspected, and that under any circumstances are subjected to closer and more critical scrutiny than roses trained over arches, banks, and the roofs of temples and arbours. The more vigorous growing varieties of Hybrid Perpetuals, Bourbons, Hybrid Bourbons, Moss, Damask, Hybrid China, and a few of the hardiest of the Teas and Noisettes, are those usually selected to form pillar roses. No

rule can be laid down as to the class of roots to be preferred, for that depends so much on the character of the rose to be planted; and in the general remarks on the families of roses, numerous hints are given as to the treatment of individual varieties so as to insure the most vigorous growth. If any rule can be hazarded, it is that as only the most vigorous growers are suited for pillars, so there is not much choice between having them on their own roots or on Manetti. If on their own roots, they will not at first grow so vigorously, for all roses capable of growing at all on Manetti grow with remarkable vigour the first year or two; but, on the other hand, Manettis sometimes throw up suckers which escape notice, and these soon tend, by their usurpation of the sap, to destroy the rose altogether, a disadvantage to be balanced against the advantage of a rapid growth at the first start. Perhaps, if the whole case is fairly considered, Manetti will win the day, so immensely does it increase the vigour of the rose it is compelled to nourish.


The culture of pillar roses certainly demands some skill; but it is a skill easily acquired by the observant and inquiring cultivator. Let us consider all the points in regular order, so as to dismiss all simple matters with a word, and deal with difficulties as they come before us at such length as their relative importance demands.

PLANTING PILLAR ROSES.

In any case the soil must be well drained, liberally manured, deeply stirred, and in a sound condition. It should be of such quality as to produce good wheat or cauliflowers, or it will never produce pillar roses. A pillar rose will require at least one square yard of soil which must not be occupied with shrubs, or grass, or in fact anything but annuals and other flowering plants of humble growth, all the summer; and every autumn this soil must be enriched with dressings of half rotten dung. As the pillars need not, and had better not, be fixed till the roses are in their third year, it only remains, after having prepared the soil, to plant firm, and insert one or two ordinary four-foot stakes. If Manetti roses are planted, be sure to place them sufficiently deep to have the point where graft and stock meet two inches below the ground line. Whatever tends to increase the vigour of a rose—such as top-dressings in summer, abundant supplies of water, etc.—must be given to pillar roses; for it is not only desirable to clothe the pillars, but to do so with *stout wood*, which can only be accomplished by feeding liberally. Let us suppose the roses planted, they are then to be cut down to within one or two buds of the base, then are to be allowed to grow the first season as they please.

PRUNING PILLAR ROSES.

The second season they will require pruning. Now, to prune them properly, the rosarian must bear in mind that it is much easier to induce a tree to grow to its full height than to induce it to form regular tiers of flowering wood all the way from its roots to its summit. This is true of apples, pears, plums, vines, and hundreds of other trees. Keep the leading shoot upright, and do not prune it at all, and it will grow with great vigour, so as continually to increase its length till it attains its maximum height; but in the meantime, the leading bud having monopolized the sap, there will be but few side-branches formed, and consequently there will be little or no flowering wood produced. The sap of a tree always rushes upwards; hence, if the leading shoot be trained out of the perpendicular, the side buds are developed, and these assume a vertical form in the majority of cases. It is true that trees *do* produce side-branches without the aid of the pruner, and that these often take a horizontal or oblique direction; nevertheless, the general tendency of the sap is upwards, and one of the first consequences of allowing a tree to grow in its own way is to cause the formation of a bare stem for some distance from the ground line; and that tendency is of itself a sufficient argument for





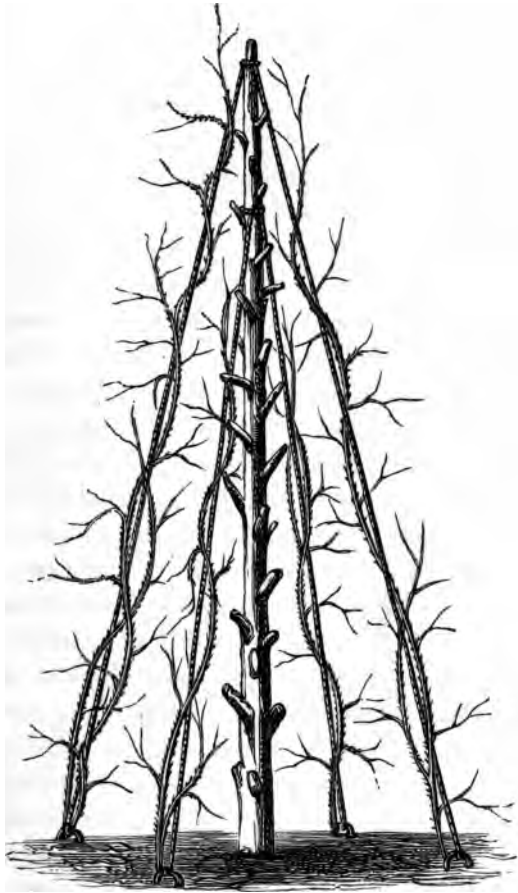
ROSE PILLAR, FURNISHED.

pruning pillar roses. In a word, if the pruning is neglected, they soon acquire their full height, but have naked stems ; whereas, if properly pruned, these stems will be clothed from head to foot with flowering branches. The pruning in the second year will consist in removing by a clean cut, to within one or two buds of their base, all long, weak shoots, reserving two or three of the strongest shoots, and shortening these about one-third or one-half of their whole length. If in any doubt as to the application of these instructions, let the rose itself furnish a hint. If it has attained to a great height, and is so regularly furnished with side-shoots as to be already very nearly sufficient to cover a pillar, prune all the side-shoots back to about four buds, and the leaders only a fourth or fifth of their whole length. If it has not grown much, cut it back very hard, removing quite half of the entire growth, so as to conform pretty nearly to this rule—*the more growth, the less pruning ; the less growth, the more pruning*. Having accomplished the pruning, lay the shoots down full length on the ground, and fix them with a few strong pegs, so that the wind may not blow them about. This will cause the buds to break—that is to say, will cause the formation of side-shoots the whole length of the rods ; and by the end of April, or the 1st of May at latest, they must be tied up to their poles or pillars.

The third season's pruning must be on the same

principle as in the preceding year; the cultivator must be more anxious about obtaining plenty of furniture—that is, of hiding the pillar with a plentiful side-growth from the ground upwards. He need not think much about getting the rose to the top of the pillar; it will go there in time, and perhaps sooner than will be good for its ultimate beauty; and if it does not, it is only needful to leave one or two long rods unshortened, and they will soon mount to the summit of their ambition. To begin, then, with the pruning, let us first determine about the furniture of the base of the pillar. Here we find already plenty of weak spray, some well-placed strong shoots, and perhaps a certain proportion of wiry twigs that produced blossoms the previous season. All the weak spray should be cut clean out, leaving only the buds at the base to break again; the same with the wood that flowered the previous year. But the strong side-shoots may be cut to six or eight buds from the base. Where the pillar is bare, cut a few shoots very close, so as to get some vigorous growth to fill up the gaps; where crowded, thin away the weakest of the shoots, and leave those that are best placed for flowering. Proceed thus till you arrive at the top, then shorten back the leading shoots according to their length and strength, but not severely, to a plump bud, to carry the growth upward the next season.

After this pruning there ought to be an abun-



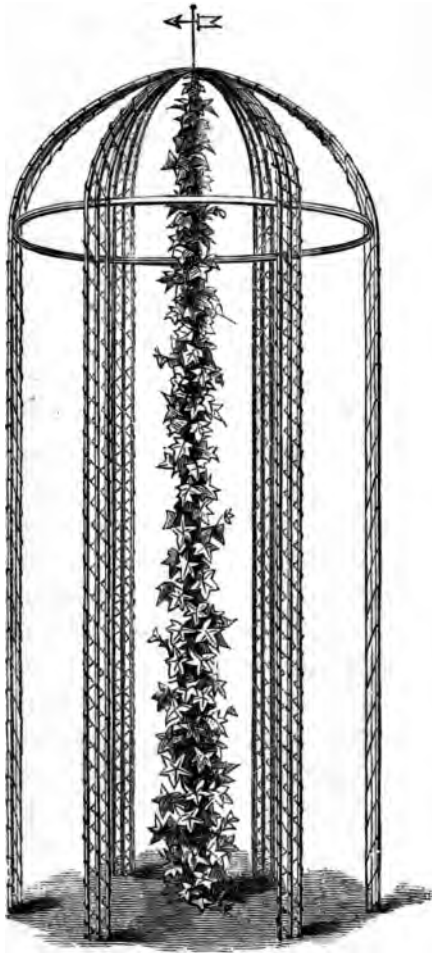
POLE AND CHAINS FOR PILLAR ROSES.

dant bloom ; and from this time forth there must be very little pruning ; the cultivator's principal care will be to keep the tree liberally nourished, and provide for the occasional *renewal of the main shoots*, for those originally formed will in time get debilitated with excessive production of flowers. It is a good rule with Provence, Perpetuals, and Bourbons to prune in the short ripe side-shoots to from four to six eyes throughout. These shortened shoots will produce flowers plentifully ; and as effect is more desirable than the quality of individual flowers, it is best, after fairly pruning, to allow all the flowers that are produced to come to perfection, helping the tree through the flowering season with copious supplies of water and with strong top-dressings.

The renewing or repairing of the pillar is accomplished by means of the strong shoots that rise from the base. As these appear, tie them in loosely, so as to induce a free growth ; prune them as recommended for the first formation of the pillar, and as soon as they reach half way up the pillar, and are tolerably well furnished with side-shoots, remove one of the old leaders, and let the young one take its place. When an abundance of young shoots is produced, some must be cut away entirely to within one bud of their base ; from the bud left a flowering shoot will generally be developed next season, or it may be another strong shoot, which may be useful, though not wanted the previous year ; in which

case keep it ; if not, either pinch it back, and cause it to form a mass of laterals, or leave it to grow its full length, and then cut it back as before. Two more remarks seem needful to complete these directions. By training the leading shoots straight up the pillars they will grow with more vigour ; by training them regularly round and round the pole, the growth will be more moderate and regular, and there will be an earlier disposition to form flowering wood. I prefer in all cases to allow new shoots to go straight up, and to twist them the next season after pruning. This secures strong wood in the first year, and plenty of laterals in the second. The last remark is, that poles and pillars should not exceed twelve feet ; and when it is determined to have them of that height, the most robust-growing pillar roses should be selected. The better kinds of Hybrid Perpetuals and Bourbons do best on pillars of six to eight feet ; if taken higher, it is difficult to keep them furnished at bottom.

We may now offer a few remarks as to the poles and pillars themselves. It is best not to insert these till the roses have grown two years, and when inserted, it must be in a way to stand firm during a gale. Larch poles, with short snags, and the bulky portion of the roots attached, make the best of pillars, as when planted they have a firm hold of the soil, and are not easily blown out of the perpendicular. Old stems of yew are very durable ;



TRELLIS PAVILION FOR PILLAR ROSES.

ash poles require frequent renewal, and being slight, it is best to put two or three close together, and brace them together with copper or galvanized wire, so as to form one stout pillar. In all cases, it is best if the lower parts of the posts can be charred, as this prevents the growth of mycelium, by which so many roses are destroyed, owing to the proximity of decaying wood to their roots.

When climbing roses are used conjointly with genuine pillar roses, very beautiful effects may be produced. The climbers may be trained as fast as they will grow, without any pruning, to cover the roof of a temple, and the pillar roses trained to the trellis supports, which by a regular course of pruning they may be made to cover completely. To form a simple rose temple is a matter of no great difficulty, as suitable breadths of stout galvanized wire trellis can be obtained at a cheap rate, and the roof might be either of zinc or copper, or left open by continuing the breadth of trellis in a graceful curve to the apex. There can be nothing more suitable for the centre of a rosarium; and, besides its elegance as an architectural object, it serves the useful purpose of displaying varieties that are only seen to advantage when allowed to grow to vast dimensions. Other and more simple methods of training will occur to the ingenious rosarian, as, for instance, the *designs annexed*, which will explain themselves to consist of tall poles sustained by trel-

lises, chains, or wire ropes, in the fashion of a flag-staff. The pole may be covered with a climbing rose, or with ivy the dark green of which would show up the roses trained to the chains very effectually.



Chapter VII.

Yellow Roses.

YELLOW ROSES.



GOOD yellow rose is certainly a beautiful object, but it is probably held in higher esteem, because somewhat of a rarity, than its intrinsic merit entitles it to. There are some yellow roses that for form and fashioning, and perfume, take such high rank that even among roses it is not easy to find their equals; yet, all things considered, yellow roses owe their fame to their scarcity, much more than to their beauty, for there are many other yellow flowers that eclipse them, at least in colour; but first-class crimson, white, or blush roses can only be compared with one another—their beauty is unique, and the question cannot be raised whether such and such other flowers are better or worse than the roses. But being rare, and requiring in most cases peculiar management, yellow roses possess an interest for the cultivator, differing in many respects from the interest that attaches to roses generally, and roses of all other kinds. We may, therefore devote a chapter to yellow roses, in the hope of rendering a service to those rosarians who have found the culti-

vation of this class attended with a few difficulties and occasional disappointments.

Yellow roses are to be found in several distinct classes. The Austrian Briers furnish a few; there are two yellow Banksians, several Noisettes, and many yellow Teas. Of these I shall speak more in detail presently, but while I happen to think of them, it is as well to name two others which belong to two distinct classes, and are the only yellows in those classes—namely, *Madame Stoltz*, a pale straw of the Damask section, and *Fortune's Yellow*, which belongs to the *Sempervirens*.

The first general remark which occurs to me upon this subject is, that among many so-called yellow roses there are but few that are really yellow, and some of the few that come nearest to the colour of guinea-gold are, like guinea-gold, very hard to get at—that is to say, very difficult to bloom. Thus, *Boule d'Or*, a lovely Tea rose, is by no means equal to its name in form or colour; it is not, in fact, a *ball of gold*, though a fine rose, and one of my favourites. Even *Cloth of Gold*, which with rose growers takes rank with *Birds of Paradise*, *Palissy Ware*, and *Queen Anne's Farthings*, is not a true yellow, nor is *Lamarque*, nor *Solfaterre*, nor two-thirds of the Teas which are described as yellow in the catalogues. But many of those that have only a predominance of yellow, and which range through yellow shades from primrose to buff and fawn, are

worth any amount of trouble to bloom them well ; and so, if yellow roses are worth a chapter to themselves, these buffs, and fawns, and straw colours must share with the true yellows some part of our anxiety to see them increase and multiply. There is yet another general remark to be made, of much more general importance than the last. The majority of yellow roses belong to families which are, generally speaking, the least hardy among the groups of roses ; they have mostly originated in warmer climates than Britain, and hence are not so thoroughly at home here as the Cabbage, Damask, and others of the truly hardy classes. Hence by their affinities they prove themselves delicate, and that some principle of their constitution which causes them to produce yellow flowers, the yellow principle, so to say, is one that unfits them for battling with adverse circumstances. As albinos among annuals are invariably debilitated, and etiolated plants have no vigour, so yellow roses, though their colours are natural to themselves, and have no affinity with etiolation, are more delicate than roses of other colours in the same classes to which they themselves belong.

This consideration affords the key to the first principle of their successful cultivation. They require a warm climate and a dry soil ; if they are not favoured with these essentials they cannot ripen their wood perfectly, and then, *par consequence*, they

do not bloom. The yellow Teas and Noisettes are strikingly influenced by varying degrees of temperature and humidity; and, when they fail to bloom, the failure may usually be attributed to the non-ripening of the wood through the influence of excessive moisture, and lack of necessary heat.

Lastly, as applicable to yellow roses of all kinds, a pure atmosphere is of the first necessity. They will all grow near towns, but it is rarely that any of them flower unless grown under glass, and happily the townsman can indulge in the luxury of yellow roses to any extent commensurate with his means to provide houses for them.

AUSTRIAN BRIERS.

In this section of roses, there are half a dozen good yellows. They are all adapted to grow either as dwarfs or standards, and do best when budded on briars. They require a moist loamy soil, they will grow freely in clay if the situation is not greatly exposed to cold winds, but on chalk and sand they usually make a very poor return. It is well not to manure the land very liberally, the tendency of manure being to cause too free and rank a growth, which is inimical to a free bloom. But above all things these roses need a pure air, they are literally useless near London unless grown under glass. The common *Austrian Yellow* is unfortunately quite a single flower, but it is marvellously pure and bright

in colour, and indispensable in any collection comprising representatives of interesting classes. This appears to be least susceptible to the effects of smoke of any of the race, and therefore may be tried in suburban gardens with a fair prospect of success. *Persian Yellow* is more particular. It must have a pure air and a rich soil, and the warmer the climate the greater the probability of success. Given these essentials the rest depends on the cultivator, who may unwittingly prune away all the bloom every year, and wonder how it is that he gets no flowers. The rule usually given is "do not prune at all," which is an absurd rule. The simplest method of dealing with it is to cut out any ill-placed shoots, and thin the head where crowded, but to leave the remainder of the shoots their full length. This treatment will ensure bloom for one season, but if continued the trees become unsightly, and the shoots extravagantly long and weak. To render this system perfect it is necessary to have two sets of trees, one set to be pruned in hard, the other set left to bloom; and the next year leave untouched those that were previously pruned, and prune in those that bloomed. By this plan one half of the trees are flowerless every year, a state of things by no means creditable to the cultivator. The better way, and one that ensures an annual and abundant bloom, is to pinch in all the plump shoots the first week in June, leaving all wiry side shoots un-

touched. These plump shoots being checked in their growth will presently put out wiry laterals, and by this practice the tree will be filled with blooming wood. As to the winter pruning, it will be necessary to regulate the head so as to prevent crowding; and at the same time all shoots that have pushed without forming laterals, must be cut back half their length.

Harrisoni is a beautiful yellow rose,* very hardy, demanding no particular care beyond what has been described as necessary for all the members of this family. *Harrisoni* does not like a south exposure, so if grown on a wall, choose a west aspect if possible. The next best is east, if there is some shelter from cutting winds. *Williams's Double Yellow* produces pale yellow double blossoms. The blossoms are small and fade quickly, the growth of the tree less vigorous than other members of the family, and therefore it does not claim a premier place among yellow roses. *Austrian Copper* or *Capucine* is a single rose, the inside of the petals fulvous, the outside a dingy yellow, inclining to sulphur. This is the least valuable of the series, though worth growing in a very pure air. *Persian Yellow* and *Harrisoni* are the two best hardy yellow roses known; and every rosarian, even if compelled to reside near a town, should endeavour to grow them both in the open air and under glass.

YELLOW NOISSETTES.

Among the yellow Noisettes there are a few which will thrive anywhere, and require very little care to ensure an abundant bloom, but these are not the kinds that the rosarian gets excited about. Anybody can grow *Ophirie*; if never pruned at all it will always grow neatly, and cover itself with flowers. So will *Jaune Desprez*; give it a warm position, either on a wall, as a standard on the brier, or as a pillar rose on Manetti, and it is sure to bloom abundantly, and charming things its flowers are, and with a delicious fragrance. I had a fine *Jaune Desprez* on a six feet brier trained on the south side of my house, and which covered a space of about 100 square feet, which was literally dense with roses for three or four months every year. The cruel winter of 1860 destroyed rose and stock together, its age being then about fifteen years. But these are not yellow roses, though sometimes so called in the catalogues.

We come nearer to the true yellow in *Solfutierre*, which was introduced by Mr. Rivers in 1842, and has always been a favourite. The colour is pale sulphur, the flowers are large and very double, and the tree grows with great vigour. Very like it is *Lamarque*, a most beautiful sulphur-yellow rose, and one of the finest wall roses known. *Triomphe de Rennes*, a true Noisette, with large canary co-

loured blossoms, is hardier than the two foregoing, and bears the smoke of towns tolerably well. At Stoke Newington it grows and blooms superbly as a standard, exposed to all the winds of heaven. *Celine Forestier* is another true Noisette, of vigorous habit, as hardy as the last, and very adaptable to any situation where a rose of any kind will grow. The flowers are pale yellow, very pure and bright, large and full, and are very freely produced if the tree is scarcely at all pruned. The best way to manage it is to cut back a few of the longest rods every spring, leaving always about half the shoots to flower, and the other half to grow. In a good season, the shoots that were pruned will flower in the autumn as well as those left unpruned. It bears smoke well, and appears to be quite at home on Manetti, if I may judge by four fine plants of it, which are doing remarkably well at Stoke Newington. But the best place for it is on a west wall, where the strong shoots can be trained in their full length, or as a standard on a brier; for when grown as a bush it is too straggling unless much pinched in, and that is apt to endanger the flowering, though the stubby side-shoots which follow are sure to flower the next season if left alone. *Mdlle. Aristide* is another vigorous grower with a strong trace of the Tea rose in its constitution, and hence not a true Noisette, and very tender. This requires a warm wall, and grows best when worked on the

Banksian rose, but it will do on the brier. The flowers are pale yellow with salmon centre, and if the tree is well fed, the flowers are large and full.

Among the strong growers we have now only three left, and they are the three finest yellow roses known. *Cloth of Gold* is truly magnificent when brought to perfection; the colour pure gold yellow, the form globular, very large and double. *Isabella Gray* differs from it in being a shade deeper in colour towards the centre. When well grown it opens freely, but is rather deficient in form; there is a sort of squareness about it which the experienced eye detects at a glance. But very often this rose does not open well, and it is very shy of blooming under all ordinary circumstances. The last of the three is *Jane Hardy*, flowers deep gold-yellow, small, but pretty; the habit that of a climber, and too tender to be used as a standard; though in a warm climate, as that of Jersey for example, where *Cloth of Gold* thrives amazingly, it would make superb weeping standards, that would look like tents of gold tissue when in full bloom.

Of the yellow roses enumerated above, there are four that call for special consideration as to the best means of securing a plentiful and an *annual* crop of flowers. These are *Cloth of Gold*, *Solfaterre*, *Isabella Gray*, and *Jane Hardy*. It is a fortunate thing that if we hit upon the right method of managing any one of these, that same method will

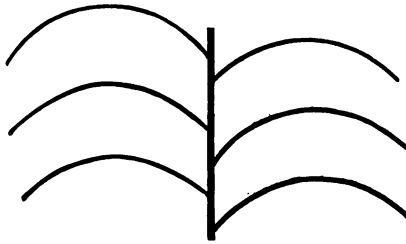
apply to all the rest. For many years the culture of yellow roses has been one of my choicest hobbies, and one that I have pursued with a fixed determination to fix in my memory all that nature taught me at every stage of disappointment or success ; and I think I am now fully qualified to show the amateur how he may make sure of yellow roses, and I hope if the world denies him riches, he will be content with these pretty representations of the precious metal.

These delicately-constituted roses require a deep, rich, dry, warm soil. If wall and border could both be moderately heated, without covering with glass, there is no doubt these roses would surpass everything, in the way of roses, ever yet seen. To do so would be quite possible, but the majority of cultivators all prefer to attempt their culture with the heat of the sun alone. It will be understood from these remarks, that to plant any of these roses in a bleak position on undrained soil, or in poor, sour, pasty stuff, would be the height of folly. They might live, but they would neither grow nor bloom. A south wall has been pronounced by a good authority, the Rev. F. Radcliffe, as unfit for them ; but this is a mistake. The fact is, the place cannot be too hot ; but as tender plants on south walls are in more danger in winter than plants of the same kind on north walls, the cultivator must make amends by protecting, and there is nothing better for the pur-

pose than a stout canvas fixed to a lath above the top line of the trees, and drawn down at night. The use of protection is perhaps of more importance in spring than winter; for, having secured a hot position and a thorough good border, the next step towards success is to promote *an early and vigorous growth*. Early formation of strong wood allows of its more perfect ripening by summer heat; and if the wood be well ripened, there will be plenty of bloom to a certainty. There are two more points for the cultivator to fix in his memory—namely, to use the knife as little as possible, and to exercise patience, for these roses must be well established, and have had some years of growth, before they acquire a blooming condition. We must now speak of them separately, as to their individual needs and peculiarities.

Cloth of Gold will do as well on a brier as any rose known. It will also do well on the Banksian; and, Mr. Rivers says, the variety *Fortuniana* is best. It will also do for a time on Celine and Manetti stocks, but unless it makes roots of its own, and so becomes independent of the stock, it may perish just as it acquires the proper age to be in perfection. It is very important to bud on established stocks, as, when the junction has been effected, the rose makes that quick and early growth which is so essential to success; whereas, if the stock be only half rooted, the first shoots of the rose

rise weak, and never afterwards acquire their proper vigour. As the shoots rise, train them their full length upright till June, then untie or unnail them, and nail them in again in the form of half circles, or as near that figure as possible thus :—




This bending of the shoots will promote the ripening of the wood ; and if the season is hot and dry there will be an abundant production the next year of golden trusses *on the upper parts of the shoots*. As soon as the bloom is over, cut half the shoots back to plump buds at the base, train the shoots from these buds upright, and bend as before. By this treatment the trees will bloom again in autumn.

It really does not matter what stock Isabella Gray is worked on ; but it must have a warm and dry position. To promote the formation of spurs it is necessary to hasten the growth by giving abundance of water, alternating with liquid manure, early in the spring, from time to time, in fact, that growth commences in the spring, to train in all the wood its full length and cease watering about the middle of July. As soon as these shoots begin to ripen, there

will probably appear a second growth of shoots from the base, and these shoots must be suppressed, otherwise the formation of spurs will be prevented. If the season is tolerably dry, and the tree has plenty of sun, it will at once throw out spurs and bloom freely. As soon as the side spurs begin to push the critical moment is past, the tree will now devote its energies to the production of flowers instead of new wood, and it may be assisted again with liquid manure. The next spring cut back a portion of these shoots, to induce a strong growth of new wood to go through the same process as the year before, and perchance on the shoots not pruned of a few (or many) blooms in May or June.

The first year that Isabella Gray was sent out, and when rose growers had no other subject to talk about, so thoroughly did it engross their attention, I purchased some plants of Messrs. E. G. Henderson, of St. John's Wood. They were in five-inch pots, worked on Boursault stocks, and consisted entirely of bloom spurs, the buds having been taken from ripe wood. There were some eight or ten wiry branches upon each, forming very compact little bushes. These little plants bloomed in the greenhouse in May, most beautifully, being completely covered with small but very perfect blossoms, of a rather pale gold colour, two or three shades paler indeed than the flowers usually come out of doors. When the bloom was over, they were cut



back very close, and the pots were dropped into larger ones and rich soil rammed in between. They soon produced shoots which naturally broke into spurs, and bloomed tolerably well in the autumn. After blooming they were shaken out, repotted into seven-inch pots, and slightly shortened. In February they were put in a warm house and again bloomed as before; but the flowers were always pale, though they were always kept near the glass. In the winter of 1860 these plants were in an unheated structure, the pots were frozen through, and they perished in company with a good collection of Tea roses that shared the same fate.

I am quite certain that any rose grower, who has a warm wall and a dry border, may secure two crops of bloom every season from any of the yellow Noisette and Tea roses. Start them early, protect the young growth while spring frosts prevail; let the unpruned wood produce its flowers, then set it back and get an autumn bloom from the shoots of the season; or treat the spurs as apple and pear spurs which continue fruitful, and instead of cutting out the wood which produced them, shorten in the spurs to one or two buds as soon as the first bloom is over, and so cause them to renew themselves and flower again the same season.

The yellow Noisettes of less vigorous habit, should, except in the most favoured localities, be grown under glass. *Le Pactole*, a fine yellow and

almost a Tea, will do on a warm wall, but it is better adapted for pot culture, and requires no peculiar treatment. The same remark applies to *Cornelia Koch*, a delicate straw colour, rather thin, but very neat and pretty, and *Smith's yellow*, which is lemon-coloured. These two force well and make excellent bushes on their own roots, but require pinching in or training spirally to induce the formation of flower buds in plenty. If worked put them on Celine stocks.

YELLOW TEAS.

The yellow Teas vary in habit, and merit much more than the yellow Noisettes. Many of them are so free in habit that it scarcely matters how they are grown, provided they are protected from the cutting winds in spring, which nip them so severely when the sap is rising. In my little rose-house all the Teas are on their own roots, planted out and grown as bushes, being simply pruned back to keep them to their proper dimensions, and they bloom superbly. They may be grown on warm dry borders in front of conservatories, and south walls, and *are always hardier when on their own roots*; or to speak more correctly, if the frost destroys all the growth above ground, the roots may escape, and if so, will throw up shoots which will soon replace those lost, and bloom abundantly in autumn. To help them through such crises, tiles may be laid over their

roots in winter, and the buds near the collar, which are a capital reserve in case of accidents to the head, may often be preserved by a light loose sprinkling of straw or fern amongst them. But this is an unsatisfactory way of growing them; their blossoms are often destroyed by heavy rains, they are too much at the mercy of the weather, and at their best they make less show as border roses than any others in the catalogue. I advise the lover of yellow roses to choose from among the Teas, first, such as can be grown as standards, and need only a little protection during winter; next, such as will be better off on a wall, being of vigorous habit yet tender in constitution; and lastly, such as are of delicate habit and weak growth, to grow under glass, in pots, or planted out in cool conservatory borders.

Let us quickly review the hardiest of them. The finest yellow Tea rose for outdoor growth is *Gloire de Dijon*, yellow-shaded salmon, good as a standard, a wall rose, a pot rose, or for a pillar under glass. It does best on brier or its own roots. A small plant on its own roots, in August, 1862, was planted out in my span rose-house, and flowered freely, being in the twiggy condition of the *Isabellas* described above—the result of being pot-bound. The next spring it was cut down to the ground. It threw up three strong shoots, which in August, 1863, were twelve feet in length, and soon


after broke into bloom from top to bottom. It makes a noble standard, and bears smoke admirably. *Niphetos* is nearly as hardy, and though a truer yellow, is not to be depended on, for the flowers sometimes come pure white. *Narcisse*, a pale yellow, is very hardy, and makes a fine standard. *Sombreuil*, a fine large pale straw rose, is another very hardy member of this race, and adapted for any purpose. *Safrano*, a lively copper-colour rose, is very hardy, and makes a lovely weeping standard. For the rest of the yellow Teas, the best place for them is the rose-house, and they will do ten times better on their own roots and planted out than by any other way, although they make charming pot plants, and, when in full bloom, contribute a magical grace to the drawing-room table. *Canary* is one of the loveliest roses in existence, the growth moderate, the flowers rather loose when expanded, but perfection when in bud. *Eliza Sauvage* and *Madame William* are very much alike, pale yellow with orange centre, and truly beautiful, habit dwarf, not very free, and the most tender of all Tea roses. *Enfant de Lyon* is a pale yellow, makes a nice dwarf bush or half standard for pot culture. *La Boule d'Or* does not deserve its name, it lacks colour and compactness, but it blooms most abundantly, and is indispensable. *Louise de Savoie*, pale yellow, is superb both for form and substance, purity and fragrance. *Madame Falcot* is good, but not a pure

yellow, it is more like Safrano. *Madame Lartay*, shaded with salmon, is useful, but not a first-class rose. *Mademoiselle Adele Jougant*, lemon colour, a good rose to force, will do on a wall, but being vigorous and tender is best under glass, for wall, rafter, or pillar. *Reine des Pays Bas*, pale sulphur, excellent for a pillar, under glass, or to make a large bush or pyramid. *Semele* is a bad colour, but a good rose; it is not so distinct and peculiar as Desprez, Safrano, or Gloire de Dijon, but is well formed, and has enough yellow to claim mention here. It is a poor thing out of doors. *Vicomtesse de Cazes* makes a grand wind up; it is a tremendously free bloomer, and is always good; the blooms large and double, the colour coppery yellow, shading at the edges to gold yellow. The rose grower who wants a new sensation should build a Paxton-house, and plant in beds all the yellow roses that can be got, and to train up rafters and form archways over the path. A house of 60 feet by 18 feet wide, with central walk and side-borders, would hold all the varieties and duplicates of all the best.

Chapter VIII.


Roses in Pots.

ROSES IN POTS.

VERY lover of roses should grow a few in pots; it is pretty practice. When well bloomed they are beautiful objects, and may be turned to good account to decorate the entrance hall, drawing-room, dining-room, and conservatory, where it is just impossible to have roses any other way. Some roses are really only adapted for pot culture, as, for instance, *Lawrencias*, and the more delicate and dwarf-habited of the *Teas*; and, irrespective of adaptability, it is only by growing certain kinds under glass that they can be had at all in the neighbourhood of towns; and, generally speaking, space is best economized by growing them in pots than by planting them out in the beds and borders of a rose house. There is another very important use to which they may be put, and that is to fill (by plunging) important beds and compartments in the most conspicuous positions in the flower garden, where it would be desirable to have an occasional display of roses, but where it would be injudicious to plant them because of their miserable appearance in winter and at all

other seasons except when they are in bloom. I grow two sets of roses expressly for this purpose, irrespective of those grown for their rarity and intrinsic beauty apart altogether from any particular method of displaying them. Let me explain briefly the nature of the scheme in which these two sets of roses play a part. One part of my small garden is kept at all seasons in as bright and perfect a condition as possible; with this object in view it is in great part always embellished with plants in pots, tubs, or simply planted temporarily in cocoa-nut dust to keep them alive without injury for a season, till they are removed to make room for the next change. In the front of a plantation of trees and evergreen shrubs, beyond which is a boundary of ivy, I have certain flower borders, a *jardinette*, and other positions requiring to be always gay. For a short period—that is, as long as they last in bloom—those borders and the *jardinette* were filled with Provence roses, the pots plunged in cocoa-nut dust, and the effect is considerably richer than could be obtained by planting the same roses in the beds; because when brought in from the reserve ground they are packed close together, and the beds are as dense with flowers as if they were gigantic bouquets. This scheme of decorating necessitates a somewhat extravagant supply of ivies, conifers, and other evergreens in pots for winter, early tulips and other bulbs for spring, aubrietias, alyssums, etc., to suc-

ceed the bulbs, roses to follow, then pelargoniums, fuchsias, chrysanthemums, etc., to wind up the routine. The two sets of roses grown for the purpose consist of common Provence and Hybrid Perpetuals, to make two displays, one succeeding the other. They are all grown in eight-inch pots, and by a very simple process. In February they are all turned out of their pots, their roots moderately shortened, and their shoots cut back to five or six buds. They are then repotted in a mixture of half turfy loam and half rotten stable dung, the stuff being rammed into the pots with a wooden rammer. They are then packed as close together as possible in a bed of cocoa-nut dust, and so left till the middle of April. A large dung bed is then made up by throwing long dung together, four or five feet deep, sprinkling it with water from time to time as the work proceeds; and on this, when beaten smooth with the fork, the pots are placed and packed to their rims with cocoa-nut dust. The bed is not covered, and no particular care is taken to ferment the dung as for an ordinary hot-bed, because being in the open air it is not likely to heat immoderately. At the same time it would not be judicious to heap up a large bulk of material that had not already gone through a first heating, as there would be danger of burning the roots of the roses, and the heat would be as brief as it was fierce. With abundance of water the plants bloom superbly, and



being in the open air they have their full size, colour, and fragrance; and by putting them on these beds in batches a succession may be obtained for plunging out. The only care taken in respect to a succession in my own case is, to put in the Provence roses a fortnight or three weeks before the Perpetuals. This ensures an early bloom of the Provence, which are used up in time to be succeeded by the first bloom of the Perpetuals.

The following are a few useful varieties to grow on their own roots for plunging out, and to select a few for the window or greenhouse.

ROSE AND CHERRY COLOUR.

Anna Alexieff, H. P.
Anna de Diesbach, H. P.
Baronne Prevost, H. P.
Bourbon Queen, B.
Caroline de Sansal, H. P.
Comtesse de Chabrilland, H. P.
François Premier, H. P.
George Cuvier, B.
Jules Magottin, H. P.
La Reine, H. P.
Madame Cousin, B.
Madame Hector Jacquin, H. P.
Madame Breon, Ch.
Madame Knorr, H. P.
Mrs. Bosanquet, Ch.

Mademoiselle Haiman, H. P.

Sir J. Paxton, B.

William Griffith, H. P.

CRIMSON.

Beauty of Waltham, H. P.

Cramoisie Superieure, Ch.

Charles Lefebvre, H. P.

Eugene Appert, H. P.

Fellenberg, N.

Géant des Batailles, H. P.

General Castellane, H. P.

General Jacqueminot, H. P.

Madame Laffay, H. P.

Prince Albert, B.

Prince Leon, H. P.

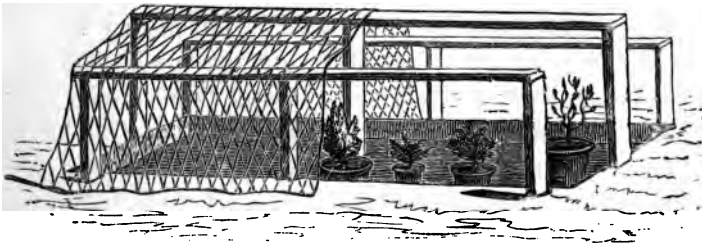
Victor Verdier, H. P.

POT ROSES FOR EXHIBITION.

The sizes of the pots in which roses are grown for exhibition must be determined by the schedules of the shows whereat they are to be exhibited. But it is impossible to grow roses fit for show in less sized pots than nine inches diameter ; and for grand specimens the pots must be fifteen inches in diameter. Between these two extremes the cultivator must take his choice, according to the requirements of the schedule and his own means and taste. As a rule, the best plants for show are those worked on

short straight brier stems, six to eighteen inches high, but Manetti bushes are eligible and so are trained climbers on Boursault, Banksian, Félicité, Manetti, and own roots. From the very first it must be borne in mind that to exhibit twelve the cultivator should have in hand at least thirty-six, and so on for every distinct effort at exhibiting, for it is impossible to rely upon having so many in bloom and in exhibition condition for such and such a day. If a hundred were grown, it might be difficult to find a dozen fit for show on a day perhaps well adapted to roses generally. But as the dates of shows are fixed before any one knows what sort of season it will be, the exhibitor must have two strings to his bow, first plenty of plants and secondly skilful management. Supposing stems to be preferred, the selection must be made in October or November, from a batch of budded plants that has been grown with a view to be flowered as specimens. Choose from these such as have a regular disposition of stout hard wood ; if the shoots are as regular as the ribs of an umbrella, the better for the shape of the trees hereafter. But it is equally important to see that the roots are good, and of such a kind that the plants can be potted in the centres of the pots ; for if there are huge knobs of underground timber, such as often occurs on old briers, they cannot be potted properly, and must be rejected. Having selected the plants, proceed to shorten the longer shoots

about a third of their length, and then pot them, using two parts sound turfy loam and one part rotten stable dung, and ramming the soil into the pots quite hard. Place the pots on a hard pavement of stone or slate out of doors, and fill in between the pots with sawdust or cocoa-nut dust. To protect them against injury by frost, a few uprights and rails may be arranged on which to throw mats or nets, as in the cut.




In case of very severe frost throw a little loose dry straw or hay amongst them, and they will escape unhurt. At the latter part of February, take them out and prune them. This must be done with care, and according to the rules laid down for pruning the particular groups and varieties. The operator must have in view the formation of a close and symmetrical head, and symmetry must be thought of more than size, because the size can be enlarged from year to year; but it is very difficult, if the head is badly shaped in the first instance, to improve it afterwards. Where two branches cross each other

close to the work remove one of them, and that the weakest or the one most twisted out of a natural position. Shorten all the strong shoots to within an average of six buds of their base, and the weak shoots to an average of two buds of their base. They must have liberal culture all the summer, abundance of water till the middle of July, after that but little. They ought to be in an airy position and enjoy full sunshine, and it is very important to arrange them after pruning so as to allow plenty of room for a circulation of air amongst them, and so that any plant can be got at readily without having to reach across another, and perhaps break a valuable bud or shoot in the operation. Take notice how they grow. Those that throw out their branches horizontally, and obliquely, and with tolerable regularity, may be left to grow in their own way. Others will grow too upright and rigid ever to make nice heads without help. Carefully draw down the outside shoots of these with strands of twisted bass, and tie them down either to their own stems or to a piece of bass, passed below the rim of the pot. If drawn down while young and soft, they will harden into the required position. It does not seem needful to enlarge upon the necessity of keeping the plants free of fly and mildew. If these get the upper hand, your chances of a prize next season are lessened.

Having grown them well throughout the sum-

mer, it is important to remove wood well ripened. This will perhaps require no special care. If the autumn is warm and sunny, there will be no fear of the wood ripening; but if it is a wet and cold autumn some precautions must be taken, such as placing all those that look greenest and growing under glass, and supplying them with abundant ventilation and very little water. Or if there is no room for them under glass range them under a wall or fence facing south, and let the pots be exposed to all weathers till there is danger of frost, and then return them to the bed for the winter.

All further operations are to be conducted with a view to prepare the plants for exhibition the next season. In October or early in November, shift those with the finest heads and most robust growth into larger pots, removing at the same time some of the soil from their roots and using to fill in half turfy loam and half rotten dung. Those that do not require larger pots should be turned out, and have some of the soil removed, and be repotted into the same pots. Every pot rose should be repotted once a year, whether grown for exhibition or any other purpose. At this and every subsequent potting, let the soil be fully two inches below the level of the rim of the pot—in the case of large pots, three inches. This will allow of an inch or more of fresh sheep or deer's dung to be spread as a top dressing as soon as the plants begin to



grow in spring, which will materially assist in producing a fine bloom. It is best to make quite a separate affair of the pruning, so as to secure the repotting of the whole stock early, as the formation of fresh roots cannot take place too soon after the season's growth is completed. As for the pruning, that must take place according to the dates at which the plants are required to be in bloom ; and here I must tell the amateur, that with all his care he must not depend on having any one batch or any one plant in perfection by a given date, and that is one reason why he should grow a considerably greater number of plants than he would ever purpose to exhibit at one time. But we lessen this difficulty: first, by having plenty of plants ; next, by pruning them in batches at different times. If the collection is large, pruning should be performed once a month, from November to the end of April ; and lastly, by forcing some, allowing others to bloom at their natural season, and retarding others. Warm greenhouse treatment from Christmas will bring the first pruned batch into bloom early, and thence the supply may be kept up till it is seen whether the season will be an early or late one. If there appears to be a little difficulty to the extent of a week or so in securing a certain number of plants in perfection for a given date, the use of a gentle hot-bed out of doors will hasten, and placing the plants in a cool north aspect, shaded at mid-day by trees, will re-

tard them a week. All these measures of hastening and retarding should be determined on at least five weeks before the date of the show.

The management of roses on their own roots will not greatly differ from that of plants worked on stems. It is desirable in the first instance to remove the three or four lowest buds from the young plants so as to form clean stout stems. To have these stems strong they should grow the first season of potting to their full height, which, if well fed, may vary from two to six feet. The next season they are to be cut down to three buds, and from those three the cultivator proceeds to form a close bush, the base of which is within an inch or two of the rim of the pot. These bushes on their own roots are really better adapted for pot culture than the plants worked on briers; but it is impossible to get them to exhibition size in the same time. The pruning and training out of these bushes will require but a slight variation of the directions given above, the niceties of the culture are to be acquired only by practice; and it is better at this point to leave the rosarian to his own resources than attempt to explain every possible detail. But it may be well to say that there can be little progress made in the pot culture of roses whether for exhibition or home use without the aid of glass; Teas and Noisettes, which make the most beautiful of pot roses, require protection in winter and spring; and there are times

when even Perpetual and Provence roses in pots must be housed to screen them from the inclemency of the blast. Potted plants occasion more trouble than those in the open ground ; but that trouble we suppose furnishes the rosarian with just the kind of recreation he needs, and he will not be slow to discover that success depends much more on constant attention than on extraordinary skill. Let it be the rule to deal with every difficulty promptly, then neither fly, nor mildew, nor drought, nor frost will be able to do much harm—sheer industry will prove a talisman. I leave the reader to make his own moral reflections, as there are too many matters yet to attend to, to allow me to be sentimental.

A FEW CHOICE ROSES FOR EXHIBITION IN POTS.

SUMMER ROSES.

Provence.—Common Cabbage, Comte Plater, Comtesse de Segur.

Moss.—Common Moss, Celina, Decandolle, Gloire des Mousseuses, Frederich Soulié, John Cranston, Luxembourg, White Bath.

Hybrid China.—Leopold de Bauffremont, Brennus, Triomphe d'Angers, Chenedole.

Hybrid Bourbon. — Charles Lawson, Coupe d'Hébé, Juno, Paul Perras, Paul Ricaut.

AUTUMNAL ROSES.

Hybrid Perpetual.—Alex. Bachmeteff, Arche-

vêque de Paris, Alphonse Karr, Anna Alexieff, Anna de Diesbach, Baronne Prevost, Beauty of Waltham, Cardinal Patrizzi, Charles Lefebvre, Duc de Cazes, Duc de Rohan, Duchess of Sutherland, Evêque de Nîmes, Eugene Verdier, François Lacharme, General Castellane, General Simpson, General Washington, Jules Margottin, La Reine, Louis Chaix, Louis Gulino, Madame Boll, Madame C. Caprelet, Madame Clemence Joigneaux, Madame Domage, Madame Furtado, Madame Knorr, Madame Pauline Villot, Mademoiselle Therese Appert, Mrs. Rivers, Prince Imperial, Reine Mathilde, Sénateur Vaisse, Victor Verdier, William Paul.

Bourbon.—Acidalie, Dupetit Thouars, George Peabody, La Quintinie, Madame Angelina, Madame Cousin, Marquis Balbiano, Prince Albert, Queen, Souchet, Souvenir de Malmaison, Vorace.

Tea-scented.—Adam, Bougere, Caroline, Comte de Paris, Devoniensis, Eliza Sauvage, Gloire de Dijon, Madame Damaizin, Madame Villermoz, Madame William, Narcisse, Niphotos, Safrano, Souvenir d'un Ami, Vicomtesse de Cazes.

A NOTE ON FORCING.

To force roses well a light airy house is requisite, but it really does not matter whether it is heated by flue, hot water, or an Arnott's stove. The beginner will have to keep constantly in mind

that extremes of heat and cold, and too rapid forcing, are the usual causes of failure. Let the plants be two years old, and one year in their pots. Early in autumn remove some of the soil from the surface of the pots, and replace it with a mixture of strong turfy loam and rotten manure. They must not be pruned until taken in to force. The middle of December is early enough to begin with the first batch; follow this with other batches at intervals, till the middle of March. At first use a very moderate heat, 50° by day, and let the thermometer go down nearly to freezing at night. When the plants have fully expanded a few of their first leaves, raise the temperature to 60° by day and 40° by night, and as they advance towards flowering increase the heat to 70° by day and 50° by night. But in the event of a period of brilliant weather the thermometer may go up to 90° with sunshine, and there will be no danger. It is very likely, in the course of the season of forcing, that very severe weather may occur. In this case the fire will require to be very carefully managed, for, as the house will probably have to be covered with mats, the continuance of a high temperature would cause a weak spindling growth. A check of this kind will do no harm beyond delaying the period of bloom, but if kept growing fast in the dark the bloom would be worthless. To guard against red spider and green fly, frequently syringe the heads of the plants with tepid water.

Chapter IX.

Roses in Beds.

ROSES IN BEDS.

SO many false notions are entertained as to what constitutes a bedding plant, and what a bedding plant should do, that I must guard the reader against supposing it is intended now to range over the wide subjects of roses generally adapted for grouping in beds. A collection of the best Hybrid Perpetual roses, either on their own roots or on short stocks, is always an interesting feature in a garden; but if the varieties are numerous we shall observe that at the best of times there are many not in bloom, and the blanks caused thereby destroy the harmony of the scene, regarded solely as intended to please by a uniform distribution of colour. Roses may be planted in a hundred various ways to satisfy the requirements of the planter, and yet in every one of the arrangements we might fail to discover, at any season of the year, a genuine bedding effect. In fact, if roses are grouped as roses, and their culture pursued under the impulse of enthusiasm for the rose, as a subject of floricultural care and study, it will rarely happen that a display is produced such as would satisfy the requirements of

persons more anxious for colour than quality, and for the greatest possible display of blooms over a given extent of ground. Yet the interests of those who entertain such (to the florist) base ideas should be thought of; and as the interests of floriculture have been kept in view when treating of the progress of the rose, it now becomes necessary to show how, in any garden tolerably well managed, beds of roses on the true bedding system may be planted and maintained with every reasonable certainty of success.

It will be seen that in making a selection for this purpose, great caution must be exercised. The most prized of all roses, the Teas, are continuous and abundant bloomers. But with the exception of Gloire de Dijon, which is the most useful rose in existence, they are too tender to be generally used; and except in the most favoured districts in the south-west corner of the island would either have to be taken up in autumn, and kept over winter in pots, or in large part renewed every spring, to make good the losses occasioned by the winter. This last alternative would defeat the object in view, for bedding roses are supposed to become established features, and replanting every season of some part of the collection would result in the production of a late and scanty bloom. Then, if I take a few of the most valued of Hybrid Perpetuals—say, for instance, Jules Margottin—we have a first-rate rose for a

third or fourth row. It makes a huge bush, and produces a grand display of its cherry-coloured flowers. But this fine rose blooms in a series of efforts, and its first bloom is generally over before General Jacqueminot, Geant des Batailles, Mrs. Elliott, and other leading kinds are quite at their best. We are to have for beds what are to be judged as beds, and not as collections of roses, continuous and late bloomers; and the choice lies among the Bengal and Noisette roses first, and next among the Hybrid Perpetuals, Bourbons, and Teas, choosing the hardiest, the freest, and generally the moderate growers.

That there may be no error as to the season for planting, we may as well inform the beginner in rose culture, that from the middle of April to the middle of June is the best time in the whole year to plant dwarf roses. They may be had in any quantity from the nurseries in small pots, and may be turned out into beds without the slightest check, and will grow vigorously and bloom late in the season, and the next year and every year after give an early and continuous bloom, provided the selection is on the right principle in the first instance. Generally speaking a sound loam, heavily manured, will grow any kind of rose. But the more delicate in habit the more the variety needs a lighter soil, and especially where Teas and Noisettes are to be planted the soil should have a large admixture of

peat, leaf-mould, sharp sand, and very rotten dung, or all of these ingredients thoroughly worked into it, and the Teas and Noisettes should be filled in at planting with just such a mixture as would grow fuchsias to perfection. Roses budded or grafted on briars or Manettis will do very well on a heavy soil, but on their own roots they are more particular, and whatever will temper the soil, should be used for their encouragement. Plant them firmly at distances proportionate to their habit of growth, water liberally at night during hot dry weather, and they are pretty sure to do what England requires of every one of us—that is, their duty.

Now as to the varieties. The two most perfect bedding roses known are Cramoisie superieure and Fabvier, of the Bengal section (*Rosa Indica*). They begin to bloom early, and they continue to bloom even after frost has withered the wettest of their buds, and they are of such a glowing fiery crimson that as far as mere colour is concerned, they have no equals. They are very much alike, and I have long endeavoured to determine which of the two is the best. I think I must decide for Cramoisie, but it scarcely matters which is used, or if the two are mixed in the same bed. These are very dwarf, have striking bronzy foliage, and do not assort in the same row, or mass with roses that have decidedly green leaves. In the same section of Bengal or China roses we have Archduke Charles, which may

be used for the same purpose as the two just mentioned, where a diversity is required, but it is a second-rate bedding rose. The colour is not satisfactory though bright, and it has a coarseness of habit which will annoy a fastidious eye. Lastly, among these little Chinas we have Mrs. Bosanquet, a delicate pale flesh, the flowers in clusters, very double, and of the highest quality in every sense. These are all the bedders in the whole of this list, but there are plenty more of the same dwarf, neat growth, and profusely flowering habit. The Noisettes offer some beauties, and for colour Fellenberg is unequalled. It is of dwarf habit, a vigorous but not robust grower, very hardy, always in bloom, and the blooms a cheerful cherry crimson, with that minute dash of blue in it which makes it somewhat of an approach to Magenta. A true bedder is Fellenberg, and splendid in a mass. In the same section we have Ophirie, a trifle more vigorous than the last, habit racemose, foliage exquisitely beautiful, blossoms nankeen copper, very distinct, and a splendid contrast to the crimsons in a bed. Among all the beautiful Noisettes there are but three others fit for the purpose now before us, namely, Miss Glegg, Aimée Vibert, and Caroline Marniesse. The first two are nearly alike, robust growers, bright shining foliage, and abundance of white flowers in clusters. The last is a free grower and an abundant bloomer, but the tint of pink in the buds and centres

of the flowers very much detracts from its merit as a bedder. Perhaps Vicomtesse d'Avesne might answer as a bedder for the sake of mauve coloured roses, but its ugly upright habit, and its ragged appearance when a few faded blooms are allowed to hang, prevent me recommending it as I have the others. Among the Teas, Gloire de Dijon is unrivalled for a pillar, a standard, or a bed; but it grows strong and is nothing if not big: and here then we have material for the centre of a large bed, where the colour, yellow salmon, would tell grandly with circles of crimson round it. Many other Teas ask for notice, but I am disposed to pass them all over, for the experiences of the winters of 1859—60, and 1860—61, have left an impression on my mind that Teas are for rose growers, not for people who want a heap of flowers, and are not prepared to incur much trouble respecting them. If an exception is to be made in this case it must be for *Safrano*, apricot in bud, and delicate buff when open; but though a tremendous bloomer is less continuous than the last, and must not be insisted on as unexceptionably desirable for beds.

Among the Hybrid Perpetuals there are true bedders, and the best is General Jacqueminot, a camellia in form, ruby velvet in colour and texture, as hardy as an oak, leaves with the delicacy of silk and the substance of parchment, and as prolific of bloom as the "daisy that never dies." It is a

grand rose for a bed, and in habit intermediate between Cramoisie and the taller growers, such as Gloire de Dijon. Next we have Geant des Batailles, considerably less vivid than the General, but is continuous in bloom, and always claiming admiration. I have gathered flowers from these two on the 15th of March and the 31st of December, in the same year, and seen blooms on them every day in the whole intermediate period. In ordinary seasons they begin early in June, and make an end of their bloom by the middle of November. After these we have William Jesse, crimson tinged with lilac; Madame Vidot, flesh; Anna Alexieff, rose; Lion des Combats, Prince Leon, Comte d'Eu, and Gloire de Rosomenes; and even with these few we are getting a little away from the mark, and there are only three that can be recommended for universal use as bedders, viz., Anna Alexieff, a first-class rose, which is most unwilling to go out of bloom; Madame Vidot, also most beautiful and full of stuff, always in bloom; and Gloire de Rosomenes, very poor flower, but the colour vivid carmine, admirable for this purpose. Among the Bourbons, Souvenir de Malmaison, flesh; Bouquet de Flore, rich rose; Acidalie, white, are all I should place in such a list as this; so that we pass over a vast host of the finest roses in cultivation, if we adhere strictly to the idea of plentiful and continuous bloom. But we have done very well. Bedding plants are used

in masses of the same kind, and we have thus a dozen distinct colours, and the varieties are twenty in number. For a thorough rose grower the list might be swelled to about sixty, but we have kept as closely as possible to those which will accomplish the true purpose of bedding plants in the hands of the least skilful. As there is luck in odd numbers we must here throw in the common China, which everybody knows and grows; and those who doubt its fitness for use in groups only need to take note of it round the margins of the Rhododendron and Pæony beds at the Crystal Palace, and it will be seen that the commonest of garden plants has an artistic value second to none in our lists.

CARPETS OF ROSE BLOSSOMS.

In the "Floral World" of May, 1860, and in the "Gardener's Magazine" of February 14, 1863, I advocated laying down the long rods of bush roses, instead of pruning them back in the usual way. I again commend this method to the consideration of the rosarian. Here, let us say, is a circle of bush roses, all on their own roots, comprising such sorts as William Jesse, Aurora du Guide, Gloire de Rosomenes, Brennus, Bourbon Queen, etc., in the front row. In the second row, General Jacqueminot, Geant des Batailles, etc. In the third row, Jules Margottin and other strong growers. The custom has been to prune them all moderately close back in March, and leave

them to flower and grow pretty much as they please. But suppose we change our tactics, and leave them all unpruned. Then, as growth is always the most vigorous at the top of a shoot, they will get tall and leggy, and be the worse for the omission. Yet if mere quantity of flowers is an object every bud from top to bottom is ready to send out flowering shoots, and by pruning, flowering shoots are sacrificed for the sake of those that remain. But we bend a branch of a fruit tree to make it fruitful, why not bend a branch of a rose to make it flower abundantly? As easy done as said. Provide a lot of strong pegs, which before the brushwood is burnt may be cut from the tree prunings and hedge clippings by selecting forked branches, and with these peg down all the shoots of all the bush roses, so as to cover the whole of the ground of the plantation. Or if that wholesale way of acting is objectionable draw down all the front shoots and cover the ground pretty equally, cutting away all soft, sappy, unripe wood, and leaving a few stout pruned stems to flower naturally. The result will be a carpet of roses. The stems laid down will flower throughout their whole length, and from the base of each will grow up a strong shoot for the next year, which may be pegged down next season if this method of treatment is approved of after a fair trial.

Besides covering the ground with roses, and so producing a charming effect, this system makes an

end of all difficulty as to modes of pruning. The amateur has no need to perplex himself to discover which of his roses should not be pruned, or which should be cut to two or three eyes; there before him is so much flowering wood, and he appropriates it all at one stroke by pegging the branches firmly down to exhibit his roses bedding fashion. Of course, after flowering, these laid stems should be cut clean away; and they can be well spared, for there will be an abundant growth of strong shoots from the root to take their place the next season.

THE ROSE MOUNT AT THE CRYSTAL PALACE.

The rose mount is divided into six compartments, and the sloping beds form six segments of the circle, the walks up to the temple dividing them, and rendering them so far distinct that each separate compartment may be judged on its own merits. In the summer of 1861, I went carefully over these beds and made a list of all the varieties planted in them. Here is the general arrangement in the crescent-shaped beds as then planted:—

Common China.

Madame Laffay.

William Jesse.

Duchess of Sutherland.

Jacques Lafitte.

Lady Flora Hastings.

Common China.

Taking this as a sample, and remembering that Common China is used all through as an edging, and the best edging for high coloured roses. The rest of the beds read thus :—

Géant de Batailles.
 Baronne Prévost.
 Madame Domage.
 Reine de Bourbons.
 Robin Hood.

In this lot Robin Hood made only a middling figure ; it has long ago been beaten as regards display, though a charming rose in shape and colour.

Géant des Batailles.
 William Jesse.
 Mrs. Elliot.
 Jacques Lafitte.
 Baronne Prévost.

This compartment was, I think, the best, Mrs. Elliot forming a splendid centre line.

Prince Imperial.
 La Reine.
 Baronne Prévost.
 Géant des Batailles.
 Mrs. Elliot.

Respecting the first row I cannot speak with certainty, it was a good deal mixed ; and Prince Imperial, or something like it, had been the original planting.

British Queen and Géant (mixed).
Viscomte de Cussy.
Duchess of Sutherland.
Jacques Lafitte.
Triomphe de Plantier.

Respecting the second row, Viscomte de Cussy appeared to be the leader, but much mixed and terribly marked with blanks caused by the previous severe winter.

William Griffiths and Caroline de Sansal.
La Reine.
Clementine Seringe (mixed).
Géant des Batailles.
Rivers.

Among the mixtures, Standard of Marengo and Dr. Marx are conspicuous, and do no violence among high-coloured roses. Indeed, bedding roses mix better than most things, because an outrageous contrast is impossible, the range of colour being chiefly limited to the various shades of pink and red.

Chapter X.

Roses in Great Towns.

ROSES IN GREAT TOWNS.

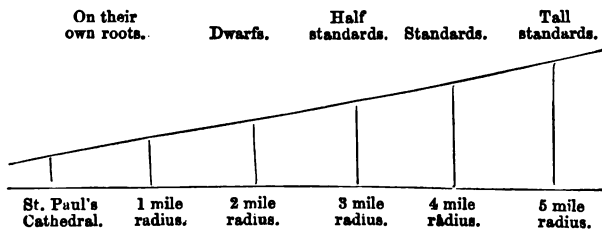
IN every pursuit there are certain hillocks to climb over, and deeps to span. The mariner may sail round the world, and be wrecked at last on the very reef whereon he tried his gun for the first time, within sight of his mother's cottage. The culture of the rose, in the vicinity of great towns, is one of those touchy tasks that test a man's patience and perseverance quite as much as his skill, and we may call it one of the peaks in the path of the suburban gardener. It is nearly twenty years since I made my first attempt to domesticate the rose in a rather rural, but very smoky district, just one and a half miles north of the General Post Office. Swan's-egg pear there used to produce fruit abundantly in favourable seasons; figs fruited on the walls, and almost everything in the ordinary run of garden stock did well, except grass and roses. A bit of good turf was worth a guinea a square foot, and it would cost almost that to patch and mend and keep it decent. The roses were a failure, for the simple reason that

I went the wrong way to work. It has been a fashion ever since the introduction of the system of working roses on briars, to plant standards on grass, and with the grass to their stems ; and that fashion has been fatal to more roses than any other similarly based on false principles. I am very glad I went the way of the fashion then, for it taught me more about the constitution of the rose than all that I have read and observed since. It taught me that a brier must be fed with liquid as well as solid food in plenty, and that on grass the feeding is just impossible. It taught me also that standards are only stumps, unless well treated at the roots, and in the enjoyment of a good atmosphere for the head. Take stock of the roses in suburban gardens, and of every hundred standards planted on grass, with no open soil around them, you shall find ninety in a starving, drifted, shrunk condition, less elegant in outline than birch brooms, and less agreeable in colour, because a birch broom has a nice shining brown bark on all its twigs, but the roses are a bad mixture of black and green, and only bearable during their short season of indifferent bloom. This remark does not apply with force to the case of roses farther off, because the farther you go from towns the better are the conditions and the more liberal the people as to proper expenses for gardening. Sooner than see the roses starve, the suburban gardeners, in many places, strip up the grass

round all their rose-trees at the fall, and lay over their roots a good layer of fat dung, and then relay the turf. But that even is a poor makeshift, and will not save the system from the condemnation it deserves. If we observe how the dog-rose grows wild, we shall find the stoutest and most lusty growths along the hedgerows of a clay country, where their roots get plenty of water, and very often some stronger stuff from the byre and the manure heap, but where there is never any stagnant wet. A bit of real clay, that has been laid up all winter to pulverize, is, when enriched with manure, the best possible soil in which to plant briars for budding, and also all flowering standard roses, which are the same briars in another stage of cultivation. If the smoke of towns does harm to the rose, the state of the soil does much more harm to the root, and the more attention is paid to this basis of operations, the more will the field widen for the growth of roses in towns. But the closer we come to the centre of a town, the more must we incline to short roses, and at last give up standards altogether.

The state of the case may be represented by a diagram, and suburban gardeners are recommended to adapt the diagram to their own geographical position in regard to the towns to which they are attached. Suppose we begin in the centre of the city of London, there I should say use none but

roses on their own roots; travelling outwards, in any one direction, I should not expect to see roses on briers till I had made a radius of two miles, and then I would have them short. The taller they are in towns, the greater is the difficulty of keeping them alive. At another mile from St. Paul's or the Post Office, I would have half standards; and at one mile more, full standards; and at five miles they might be of any height desired, to form weeping roses on lawns and back rows of broad banks. Here then is the diagram, which may be considered as representing the gradation of heights, on a radius of five miles from St. Paul's Cathedral.



Whatever exceptions may be made to such a rule must still be in accordance with the principle it involves. It may happen that in the three-mile radius the air and soil offer the best conditions for roses of every size, shape, and variety; and such is almost the case at Stoke Newington; and it may be that even at the four-mile radius, the proximity of a floorcloth factory or a hungry soil compel the ama-

teur to consider himself on equal terms with those who live two or three miles nearer the centre of the metropolis. If I could command acres here instead of rods, I could grow the tallest weeping roses, because the soil is a sound yellow loam, inclining to clay, and at four feet deep it is the best quality of brick earth, and would grow wonderful wheat and cabbages.

Generally speaking, the soil of London gardens is a villanous black, indescribable substance, neither loam nor clay, nor sand, and the wonder is that many good things grow in it so well as they do. People take it into their heads to have roses—they order standards and plant them in this stuff, perhaps very near boundary walls and under the shade of trees. I have shown how to get the maximum of light and air in any confined space in the chapters on “laying out” suburban plots in my “Town Garden,” and there only needs to put a little proper soil at their roots for every townsman to have his plot of roses, whether among the thick of the houses, or in the outskirts, where there is often more factory smoke than in the hearts of cities. The general objection to worked roses in town gardens, is one which has a scientific basis. No matter what the rose, whether Hybrid Perpetual, Bourbon, China, or Noisette, the stock is the same, and therefore we are dealing with the dog rose, so far as soil, manuring, and watering are concerned, under whatever circum-

stances and in whatever positions we may plant them. Now, thrifty as the dog rose is when it can bite a piece of manured clay or fat yellow loam, it is far less adaptable to soils of various qualities and textures than certain cultivated roses ; so that with roses on their own roots, we have a choice of those which will take to the place and like it. With worked roses we have no choice, but the brier always, which has one fixed constitution, instead of ornamental roses, which have many. To make this case plainer, suppose a person to choose Geant des Batailles, General Jacqueminot, Souvenir de Malmaison, Mrs. Bosanquet, and Duchess of Sutherland, just to see if roses will answer in a town garden. If he has standards they are all of the same habit as regards soil, because all on the same kind of roots, therefore he has *one* constitution to deal with. If on their own bottoms he has *five* constitutions to deal with, each with its own peculiar mode of rooting and power of resisting untoward influences. His chances of success, therefore, are as four to one ; out of his five sorts, one, two, three, four, or five may answer, and he will know which of them are likely to pay him if planted in quantity, and each and all of them may thrive in a place where no rose would live long on a brier, simply because of the brier being out of its element. This point settled, brings us to the choice of roses for town culture ; and here let me give a last reason in favour of dwarf plants, and it

is this, that in very smoky places they may be covered with bell-glasses, as recommended by Mr. Cranston in his capital shilling book. When the neighbouring brewery sends its blackest clouds abroad at certain hours of the day ; when the floor-cloth factory diffuses a more than ordinary amount of gaseous poison, then the bell-glasses would screen the roses from the worst of the blacks, and keep a moisture about them beneficial to their foliage and swelling blooms, and the glasses could be removed at night, early morning, or at such other times as the nature of the district might warrant, because there is a periodicity of such things in towns, and an observant cultivator will know how to arrange his plan of giving air and excluding it, so as to get the best and avoid the worst. If yellow loam or mellowed clay cannot be got to refresh the plot chosen for roses, then use, as a dressing, and in liberal quantity, the scrapings of Macadamized roads ; I find it a most valuable material. I get here a mixture of the scrapings of gravel as well as granite roads at half-a-crown a load, and find it of great service in tempering the texture of the heavy soil of the place. It contains plenty of the dung of well-fed horses, plenty of siliceous matter, and an abundance of alkaline salts, consequent on the trituration of the granite. Strange to say, a bank of conifers planted in this mixture seven years ago are now in the most luxuriant health, and, as a rule,

animal manure is injurious to them. For roses, especially the more tender kinds on their own roots, and also as a top-dressing for beds and borders, it is the best material within easy reach of Londoners.

My garden is three miles from the Post Office ; it is moderately open, and the soil is a sound loam that had never had a spade deeper in it than two feet before I took it. I can get any quantity of silky yellow loam or stiff clay that I like to dig for, and smoke and the shade of trees are the only drawbacks to rose growing. I have been, during the last seven years, growing roses of all kinds, and in my garden list there are entered 300 sorts that I can keep. Those that fail here will certainly have no chance nearer London, and many that do well I would not recommend to Londoners. Among the Teas, Gloire de Dijon and Niphetos are the only two of which I would speak as fit for any climate and the most smoky places ; and they may be tried with a prospect of success in the heart of any town not further north than Nottingham. At the Temple Gardens, Gloire de Dijon is nearly as good as I get it here, but it is in an open place, and in the hands of a master. People as well off as I am as to circumstances, may plant *Eliza Sauvage*, *Semele*, *Madame Bravy*, and *Devoniensis*, for they do amazingly well here, and the dwarf plants of them get through the winter without lifting by laying a few foot tiles over their roots. Among the Bourbons,

Noisettes, Hybrid Perpetuals, and Chinas, we shall find a sufficient number to make up a rosery in any town garden, especially if the grower will be content with a few safe sorts instead of aiming at great variety. The summer roses and the climbers offer but few, and though common Moss and common Cabbage—two of the most beautiful roses in cultivation—grow here to perfection, yet I would not recommend them for people living an inch nearer London than I am. But Maiden's Blush, Damask, Ville de Bruxelles, Gallica Napoleon, and Boule de Nanteuil, and Hybrid China Chenedole will give summer blooms anywhere if on their own roots in good soil, and not utterly shrouded by high walls and trees. Among the climbers, *Félicité perpetué*, *Ruga*, *Boursault Crimson* and *Inermis*, are all that I can recommend; the *Multifloras* are useless, they want high and hot walls in good country air. In all classes the hard-eyed roses are useless; they make good growth and abundance of bloom buds, but not one bloom in fifty opens properly. *H. P. La Reine*, one of my old favourites, has ceased to be a favourite since I came to Newington, it never opens; *H. P. Auguste Mie* the same; and as for *H. P. Louis Bonaparte*, one of the freest flowering and finest formed roses we have, it is here the ugliest fright imaginable.

To do justice to old friends, then, let me tell you one of the greatest enjoyments I have in the season

of roses is a long treble row of common Cabbage and common Moss, which occupy the front of the piece I devote to hollyhocks. It is a glorious treat when these are at their best, they are so fresh and fragrant. There is nothing to beat them in the whole round of rose culture : they take care of themselves, have but one off-hand pruning every spring, and in due season they are always smothered from head to foot with their exquisitely tinted and fragrant blossoms, when half open as round as a ball, or more like the cheeks of a chubby baby that grows fat because it never cries ; and their deepening rosy tints towards the centre answering very well to a baby's pouting lips, just ready for rollicking laughter. Now there are two roses for folks who dwell in the suburbs of towns and not in the very heart of districts permanently darkened by coal smoke, which they may grow by scores, and I want to know why they do not grow them ? Nobody recommends them, that's the reason ; there is such a rush after the last novelty, and the huge roses people see at the exhibitions, that the Cabbage roses they pay a penny a piece for in the City to put in button-holes, are forgotten as things that may be grown at home in the smokiest of atmospheres if they are but honestly dealt with. But in what does honest dealing consist ? Thereby hangs a tale. I said above, mine take care of themselves ; by that I mean, they have very little attention, and in my strong soil they do

not need it. You may guess the soil here suits roses, if I tell you that blooms on *Madame Damage* frequently measures six inches across, and hold together after opening eight to ten days, on shoots of the year before as thick as a carpenter's pencil. But the fact is, my Cabbage roses are sometimes taken up for alterations, and lay in by the heels all the winter, and are not planted again till March, and then bloom abundantly. When they are pruned, the ground is dressed with two inches of wood-ashes, and the result is immense vigour of growth; some of the shoots of this season are three feet long, and as thick as my second finger. Now, you suburbanite, you would like such a lot, would you not? Well, don't go planting them in the borders next walls, or palings, or privet hedges; they will do no good there. Follow the plan recommended in the "Town Garden," and give them a piece of ground in the centre of the garden where there is a maximum of light and air. Trench the ground in October two spades deep, and leave it rough. Then dig it in the usual way and manure it liberally with half-rotten dung; plant the roses in November, tread them in firm, and leave them alone till March; then prune them all uniformly to within six inches of the ground. If they bloom but moderately the first season never mind, they will bloom freely enough every season afterwards, and the pruning will be a simple matter of cutting all the shoots of the previous year back

to about half their length, to keep the plants uniformly about eighteen inches or two feet high. Every three years take them up and divide them at the root, or better still, to prevent suckers, put in a few cuttings in the open ground every October, and you may keep a whole neighbourhood supplied with plants from your own nursery. As they can be bought for five shillings a dozen, here is a cheap and certain start for anybody who loves roses, and who cannot escape from bricks and mortar. But that there may be no mistake in this matter, let it be understood that I do not recommend for town gardens any of the delicate varieties of Moss and Cabbage roses. Take the common kinds of both, and be content till you can prove for yourself that it is possible to grow others, then follow up with *White Provence*, *Crested Moss*, *Alice Leroy*, *Baronne de Wassenaer*, *Gloire des Mousseuses*, *French Crimson Moss*, *White Bath*, *Princess Royal*, *Madame Edouard Ory*, *Salet*, and a dozen or so others indescribably beautiful, the last two just named being moderate autumn bloomers.

Let me tell you of a few of the summer roses of inestimable value for town gardens, and which will never be thrust out of good gardens by any extension of autumnals. There are some beauties among the Damask, Gallica, and summer Bourbons that are the very perfection of roses; nothing can surpass them, and unlike many of the autumnals, they are

more *uniformly good* in favourable and unfavourable seasons, and *never fail* to bloom when their season arrives. Moreover, they are, for the most part, a few degrees hardier than the autumnals; certainly, after the winter of 1860 there were plenty to be had from the nurseries where not an autumnal was to be found in a specimen state. When we have pitched the praises of H. P. *General Jacqueminot* in the highest key, there remains *Brennus* quite as good, but not a Perpetual. *La Ville de Bruxelles*, delicately crimped and quartered, and with vivid crimson lines upon its ground of light rose, a gem in colour and a tremendously free rose to grow and bloom. So again *Boula de Nanteuil*, *D'Aguesseau*, *Duchess of Buccleuch*, *Kean*, *Ohl*, *Transon Goubault*, and *Triomphe de Jaussens*, all high coloured. Gallicas will grow in any moderately-open town garden, and make the finest heads as standards of any class of roses we have. Of Hybrid China and Bourbon there are a fair dozen for the townsman all proved, and the best of them are *Brennus*, a thorough bouncer of a rose, *Coupe d'Hébé*, *Frederic the Second*, *Comte Boubert*, *Paul Perras*, *Paul Ricaut*, and if the situation is really good, *Madame Plantier*, pure white, most beautiful when just expanding from the bud. As to the Hybrid Perpetuals, there are several beauties which can now be added to the former list, and amongst them *Madame de Cambacérès*, a fine large cupped rose-coloured flower of profuse habit, a

better London rose perhaps than any yet announced. For abundant bloom, good constitution, and first-rate exhibition qualities, take *Washington*, *Victor Verdier*, *Madame Domage*, *Lord Raglan*, *Madame Knorr*, *Madame Laffay*, *Cardinal Patrizzi*, *Eugene Appert*, *Nicholas Bellot*, and *Madame Vidot*, and you have the cream of the section.

Roses for town gardens must not be selected according to the repute they have in the books; thus, I would advise townsmen to be very cautious about using *Geant des Batailles* as a standard, in which form near London it is always deformed and leprous with mildew. On its own roots it is, like most of its kindred, a much better grower than when hoisted up out of its element, and on foster roots. So as to quality, by comparison, where few roses can be grown, I would strike out nearly all the *Noisettes*, for what among them can be worth growing in towns, except *Aimée Vibert* and *Fellenberg*? Some *Gallicas*, still retained in the catalogues, are rubbish; as, for instance, *Dido*—who will care to see *Dido* a second time? *Pharericus* is only fit to grow in a hedgerow, and the townsman must have nothing to do with *Alba*, *Hybrid Provence*, *Austrian*, or *Banksian* roses, except to grow under glass, on which subject we must have a word hereafter. For a final remark, before presenting the revised lists, what is the use of roses of sprawling habits, except to peg down or cover rockeries? In a mixed col-

lection they are a positive nuisance. Plant *Caroline Marniesse* on its own roots, in a row with perpetuals, and what a disgrace it is to the scene with its shabby white flowers and thrust-out brier-looking growths. So with *Auguste Guinnoisseau*, unless pegged to bloom on the ground, it is always untidy, and if wetted with a shower while in bloom tumbles over and gets its fine crimson petals drabbled with dirt. My way of growing these sprawlers, the pretty Fellenberg included, is on the face of a rockery, where they can lay full length, and make a pretty sparkling of their clustered flowers.

SUMMER ROSES FOR TOWN GARDENS.

Provence and Moss.—Common Moss, rose ; Common Cabbage, rose ; Maiden's Blush, flesh white ; White Moss, white ; Luxembourg, crimson ; *Purpurea rubra*, purple ; Comtesse Murinais, white.

Damask.—La Ville de Bruxelles, flesh, and deep rose ; Common Damask, crimson single, but good.

Gallica.—Boula de Nanteuil, crimson purple ; D'Aguesseau, rich crimson ; Duchess of Buccleuch, dark rose and blush ; Kean, velvety purple, scarlet centre ; Ohl, dark crimson ; Transon Goubault, deep crimson ; Triomphe de Jaussens, crimson, shaded purple.

These seven French roses are large, full, finely formed, and the very best of show roses. They require generous culture, and close pruning. There

is a long list of Gallicas, but very many are worthless.

Hybrid, China, and Bourbon.—Beauty of Billard, crimson ; Blairii, No. 1, light rose ; Brennus, deep carmine ; Charles Duval, deep pink ; Charles Lawson, vivid rose ; Chénédolé, vivid crimson, fine for a pillar ; Coup d'Hébé, deep pink, exquisite ; Frederic the Second, crimson purple, fine for a pillar ; Fulgens, deep crimson ; General Jacqueminot, purplish crimson, dull, but free and good ; Madame Plantier, white, fine for a good position ; Paul Perras, pale rose, rather delicate ; Paul Ricaut, rosy crimson ; Vivid, glowing crimson.

AUTUMNAL ROSES FOR TOWN GARDENS.

Hybrid Perpetuals.—Abd-el-Kader, bright velvety purple, shaded with scarlet, large ; Alexandrine Bachmeteff, bright red, large ; Alexandrine Belfroy, peach, a full, handsome rose ; Alphonse Karr, bright rose, a gem, though small ; Anna Alexieff, rose, large, full, good habit ; Anna de Diesbach, clear rose, large ; Baronne Prevost, pale rose, very large ; Baronne Hallez, dark red, full ; Belle de Bourg la Reine, satin-like rose, large ; Cardinal Patrizzi, brilliant red, shaded ; Caroline de Sansal, clear flesh, edges blush, large ; Colonel de Rougement, pale rose, shaded with carmine, very large, sometimes loose ; Comte de Nanteuil, bright rose, darker edges ; Comtesse de Chabillant, pink, beautifully

cupped, large, very sweet ; Docteur Marx, carmine, large, not a show rose ; Duchess of Sutherland, pale rose, large, and very double ; Evêque de Nîmes, bright purplish red ; Eugene Appert, velvety crimson, pointed petals, striking, fine foliage ; General Jacqueminot, brilliant red, velvety like a camellia, large, but not sufficiently double ; General Pellissier, delicate rose, large, very sweet ; General Simpson, bright carmine, full, fine shape ; General Washington, bright rosy red, large and full, one of the best ; Gloire de Santenay, scarlet crimson, very fine ; Jules Margottin, bright cherry, large and full, superb, and a tremendous grower ; Leon des Combats, reddish violet, often shaded with scarlet ; Lord Raglan, scarlet crimson, edges violet crimson, large, full, splendid foliage, quite *sui generis*, and a fine grower ; Louise Peyronny, silvery rose, large, full, but shy ; Madame C. Crapelet, red, veined with lilac, large, full ; Madame de Cambacères, rosy carmine, large and full, fine form, and one of the best town roses ; Madame Domage, bright rose, very large, double, and exquisitely scented ; Madame Knorr, bright rose, edges paler, not to be surpassed by any rose when in bud ; Madame Laffay, rosy crimson, large ; Madame Vidot, transparent flesh, shaded with rose, imbricated, always perfect ; Mademoiselle Alice Leroy, delicate rose, shaded, small ; Mademoiselle Betsy Haiman, brilliant cerise, lovely colour, finely cupped, grows like Jules Margottin,

and should have a place with that and the General ; M. Louise Carique, bright rosy carmine ; Marie Portemer, purplish red, full ; Mrs. Elliot, rosy purple, large and very double, shy ; Mrs. Standish, rosy lilac, large, and showy ; Ornement des Jardins, brilliant crimson, velvety, effective ; Pius the Ninth, crimson purple, large ; Prince Leon, bright crimson, large, double, and perfect in form ; Prince Noir, dark crimson purple ; Sénateur Vaisse, bright red, large, double, superb ; Souvenir de Leveson Gower, fine dark red, changing to ruby ; Souvenir de Reine d'Angleterre, bright rose, large, and full, very fine in the first bloom, and of very little account in London afterwards, therefore thin it well, secure a few good blooms and be content, it is scarcely an autumn rose in town ; Victor Verdier, rosy carmine, purplish edges, large, showy, free, very effective ; William Jesse, crimson, tinged with lilac, very large, rather sprawling as a dwarf ; William Griffith, pale satin rose, large, and full ; Comte d'Eu, brilliant carmine, often beautiful ; Géant des Batailles, brilliant crimson, shaded with purple ; Gloire de Rosomenes, brilliant carmine, showy, semi-double, a sort of large edition of Fellenberg, and always in bloom ; Lord Palmerston, cherry red, full, fine form, flowers freely ; Louise Odier, fine bright rose ; Thomas Rivers, rosy lilac, large.

Bourbon.—Acidalie, blush white, will do instead of Souvenir de Malmaison and Devoniensis, where

those cannot be grown, as it is less delicate than either of them ; *Aurore du Guide*, purplish red ; *Comtesse de Barbantanne*, flesh colour, large ; *Docteur Leprestre*, bright purplish red, shaded ; *Dupetit Thouars*, beautiful bright crimson, large and full ; *Empress Eugenie*, rose, purple edges, large ; *Justine*, rosy carmine, good, very double ; *La Quintinie*, bright crimson, shaded, or changing to blackish violet, full ; *Leon Oursel*, light red, large, and full ; *Prince Albert (Paul's)*, scarlet crimson, the finest bright rose of this class ; *Queen*, buff rose, free bloomer, large and double, really the second best rose for London ; *Sir J. Paxton*, bright rose, shaded with crimson ; *Souvenir de Malmaison*, clear flesh, edges blush, the best light rose in existence, all points considered, and a few degrees hardier than *Devoniensis*.

Noisette.—*Aimée Vibert*, pure white ; *Desprez à fleur jaune*, red, buff, and sulphur, variable, very sweet ; *Lamarque*, sulphur yellow, very large ; *Ophirie*, nankeen and copper, very beautiful, and a remarkable rose for effect ; distinct, full ; *Fellenberg*, cherry red, very lively, and always in bloom ; *Jeanne d'Arc*, as good as a *Tea*, will be very useful for those who cannot grow *Devoniensis*.

China.—*Archduke Charles*, shaded rose, changing to crimson, third-rate in quality ; *Cramoisie Supérieure*, rich velvety crimson, the best bedder ; *Elise Flory*, rose, small and pretty ; *Fabvier*, bril-

liant scarlet, dazzling, semi-double, and the second best bedding rose ; Mrs. Bosanquet, pale flesh, clustering, most beautiful.

Tea-scented.—Bougère, deep rosy bronze ; Devoniensis, pale yellow, superb in bud, must have a good air ; Gloire de Dijon, yellow, shaded with salmon, very large and full, a superb rose for London ; Madame Bravy, cream, large and full ; Niphetos, pale lemon, often snowy white ; Safrano, bright apricot in bud, changing to buff ; Semele, yellow and fawn. These Teas are entered for gardens where the more robust roses have been found to do well. There will always be a certain amount of risk in growing Teas near towns, and those few named are the most likely to succeed, where it has already been ascertained that Moss, Provence, and Hybrid Perpetual roses do tolerably well.

THE PILOT ROSE.

In every pursuit there occur circumstances in which it is desirable to have some guide from the known to the unknown. In mathematics there are many contrivances for indicating the character, and even for dealing with the powers of unknown quantities. In meteorology, we have instruments which indicate what the weather will be at such and such a time. Those who search for minerals, water, and other subterranean treasures, use the divining-rod ; American honey hunters trust to the teaching of

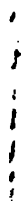
the honey bird ; mariners entering strange bays and rivers, engage the services of pilots. When an enthusiast in roses removes from country to town, he passes through two phases of mental misery. First, he is beset with fears that his days of rose-growing are over and gone for ever ; but when he finds a few roses growing in town gardens, some in tolerably good health, and others in a galloping and sooty consumption, his first fears give way and are swallowed up in all sorts of perplexities, amongst which this one is most prominent of all, the difficulty of determining by some rule or general indication to what extent rose-growing may be pursued in any particular locality. It so happens that the services of a rose pilot may be had at a very low rate of expenditure—a pilot as trustworthy as any of the old blue jackets that bear the Trinity mark. It is the common China rose, which is the most susceptible of all roses to the influence of smoke, the fumes of chemical works, and the dust and dirt of town atmospheres. As towns enlarge, and shed heavier clouds of soot upon the suburban gardens they intend shortly to destroy, the common China rose is the first to feel the shock, the first to succumb to it. It is a fuligometer, that is, a measurer of soot ; or, to coin a neater phrase, a fumometer, a measurer of smoke, and its indications are as reliable as those of the magnet and the pole-star.

As soon as the common China rose begins to

show signs of declining vigour, let the rosarian take warning. He will soon after find his Teas, Austrian Briers, and the delicate kinds of Noisettes bloom less profusely, less brightly, and less sweetly. Exactly in the degree in which common China grows and flowers, may the rosarian indulge his love for roses of all kinds. Where it merely keeps alive and blooms very sparingly he must be content with the hardiest and freest of Hybrid Perpetual, Bourbon, Cabbage, French, Damask, Scotch, and a few Noisette roses. When the common China is at last killed by the increase of coal smoke he must part with all the Noisettes, all the Hybrid Perpetuals and Bourbon roses that have light green foliage, and with some of the French varieties, or in a year or two they will become his tormentors, and plague him terribly before they also die outright. But then if he cares at all for roses he will cover his ground with glass, put woollen net over the ventilators, and begin again, defying the enemy by creating a climate equal in purity to the breeziest of the chalky downs in southern counties. Where the common China grows with vigour, and flowers as profusely as a scarlet geranium, any other rose will thrive, from the most delicate lemon-coloured Tea to white and crested Moss roses, which must breathe a pure air, or perish of consumption. It is a question of climate and soil there, the cultivator need have no fears about the effects of coal smoke.

Chapter XX.

Tea Roses in Towns.

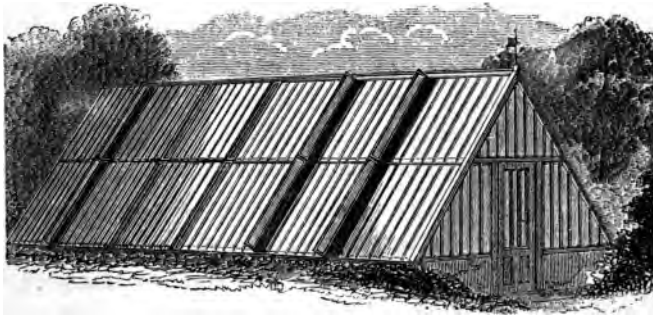


TEA ROSES IN TOWNS.

IT fortunately happens to be a fact, that whatever plant is too delicately constituted to endure unhurt the smoke of towns, can be grown under glass to perfection. To use a comprehensive expression, Londoners may grow anything under glass, provided they do not roast, bake, or boil the plants, contingencies likely enough when glass is put up without some forethought of the use to be made of it, or where greenhouses already standing are suddenly appropriated to the culture of hardy plants. Yet it only needs proper management to grow the hardiest of plants in common greenhouses, for abundant ventilation will keep down the heat, shading will help to prevent scorching, and the frequent use of the watering-pot will assist in the production of a luxurious growth, which would be almost impossible out of doors early in the season. Roses may be grown in any greenhouse, in fact, the roughest structure suffices if tolerably weather-proof, and admitting plenty of light and air. Where forcing is not attempted an orchard-house is the best place

for tender roses, and where they bloom six weeks earlier than the same varieties out of doors. I have several times put it on record in the "Floral World" that at Stoke Newington Tea roses are not generally happy. Gloire de Dijon, and Devoniansis, Safrano, Niphetos, and sometimes Sombreuil and Narcisse, do pretty well out of doors; but to have a collection exposed to all weathers is rather a vexation than a pleasure. People who take notes in my garden tell me the air must be remarkably pure, and the soil one of the best in England. It is true the air is the purest I know of at the same distance from London—that is, three miles as the crow flies; and the soil is a fat yellow loam resting on clay, and in some parts the clay is near the surface. But much of the beauty of vegetation here is simply the result of good culture. If I intend a plant to grow, and there is a reasonable probability of its growing, it wants for nothing requisite to its success, and there is perhaps no garden similarly situated and of similar dimensions in which there is a better selection of interesting and beautiful objects. But this is nothing more than should be, considering my responsibilities as an adviser and a doctrinaire, and there is a limit to my skill as to all other human efforts, for I cannot make much of Tea roses without the help of glass. Two years since, therefore, I determined to make an end of the vexation of living in the midst of flowers and having so few of these

most beautiful of all the rose family, and the question of course arose, what sort of house should be built for them. In any case I said the house must be a span, and because of the limited space at disposal, it must be in miniature. I am not a freeholder, and therefore there was the additional necessity to have it legally portable, so that at any time it could be carried away and deposited unhurt wherever my lot might be next cast. As we are being fast built in, and have the promise of a railway to skirt the




PAXTONIAN ROSE-HOUSE AT STOKE NEWINGTON.

lower end of the garden, all my proceedings are shaped with a view some day to removal. I saw plainly that Sir Joseph Paxton's patent was the thing for me to patronize, and by means of two letters to Mr. Hereman, to settle the size and price of the house, all preliminaries were settled, and before the postman who took the second letter ordering the house to be supplied could have fairly

rested from his journey, there stood at the front gate a waggon piled to the height of the first-floor windows with bran span lights, all glazed and painted, with the doors, ventilators, bolts, screws, everything down to tenpenny nails, so that with the aid of a couple of carpenters the house was put up, in less time and with about a fiftieth part of the labour required to print this little book about roses.

So much by way of history. The description may be similarly brief. The house is a span, with very sharp pitch, glass to the ground; the lights ride in the gutter, the gutter rides on wooden chairs, the chairs rest on concrete piers; it is as substantial as a rock, and as portable as a bedstead. The lights bolt together at the ridge, as if fitted together by hinges, so that they can be drawn out at any time to make a house one-third wider and of a low pitch; the ends are fixed under the styles of the roof sashes by means of small iron plates, the doors hang as other doors do, and the ridge is covered with a ridge-board, as in any other span-roofed house. The view of the structure will make all this plain, and show that a house of this kind may be adapted to any position and to any sort of garden.

Now you may ask why this particular form of house in preference to any other. Let me therefore remark, that to grow roses under glass you need protection from frost and excessive wet in winter; this, a glass house of any kind will supply. But



you need all the help possible from sun-heat in spring, for sun-heat to roses is as much superior to fire-heat as fire-heat is superior to no heat at all when frost rages for weeks together. With such a steep pitch there is an immense gain of sun-heat in spring, and this house is generally four degrees warmer than one of lower pitch would be, from an early hour in the morning, from the beginning of March to the middle of May. Therefore the roses are greatly assisted to bloom early and strong. But during the summer there is need rather of coolness than heat; certainly we do not want roses to be kept in an oven from June to August, and it happens that when the sun gets high in the heavens a steep pitch catches less of his rays, and a low roof is preferable to collect sun-heat. So by the use of this form of house we get aid from the sun when we most need it, and when an increase of the natural temperature is no longer desirable, there is the least possible difference between the temperature in the house and out of doors.

But the value of this style of building is not merely in the angle of the lights, for a house of any other kind could be built to the same angle, and these Paxtonian houses can be made as flat as any others, and are often so made for growing pines and other such things. But there are two special advantages, and the first of these is the perfect system of ventilation. The ventilating shutters are in two

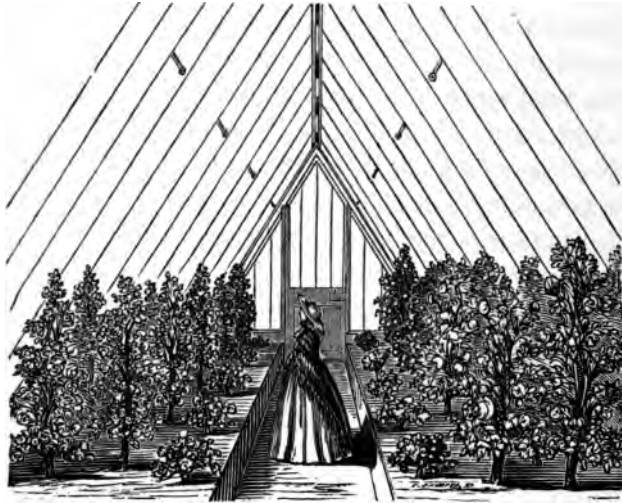
divisions, the whole length of the lights, and admit air either from the ground to the roof, or from the ground half-way up, or from the ridge half-way down, at the will of the cultivator. Thus there can be kept up a continual circulation of top air, which is desirable on sunny days in spring, or of air the whole length, which is desirable day and night all the summer in the case of roses, and the ventilators of this house are all open day and night from the first week in June till the middle of August. I believe there is no system known equal to this for maintaining throughout the house a constantly moving atmosphere, the breeze playing through the leaves without violence, even when a gale is blowing, and still moving even when the air outside is at a dead calm. The heat of the sun striking on the glass and wood causes all the air in the house to rise and escape at the edge of the ridge-board; this is the origin of the circulation when the air outside is still. The upward motion causes an inward flow of air at the bottom, and thus stagnation is impossible, and Phœbus himself works the windmill exactly at the rate needful, for the fiercer his heat the more rapid the escape of air at top and influx at bottom.

Our rose-growing readers will fully appreciate the importance of all this. A stifling atmosphere is death to roses, no matter if Teas or what else. But they want no artificial heat to produce a good bloom, if the cultivator is content to wait till the sun brings

them out naturally. Therefore this house is not heated in any way, and as an indication of what may be done without fire-heat, it will suffice to say that many of the roses in the house are usually in full bloom in the first week of April, and by the second week in May they are all out or covered with expanding buds, and so they continue till the end of June, when they rest from their exertions, and prepare for a fine bloom all the late summer and autumn, some lasting till after Christmas.

The view of the interior will show that the roses are all planted out in the two side borders, and the way they are planted may be worth telling to those who are fond of Tea roses, and have no prospect of growing them well in the open ground. In the first place, then, the house measures 35 feet long, 16 feet wide, and is 12 feet high from the path to the ridge. It is, therefore, strictly a miniature rose-house. The borders are 80 inches wide, and are kept up by means of stout planks, neatly planed, and painted stone colour. The walk is sunk 15 inches below the top edges of the boards, and it consists of a mixture of fine gravel mixed with Portland cement, laid down on a bottom of hard stuff, and then watered and rolled while wet with a garden roller. It has the fresh colour of good gravel, and is as hard as a pavement. I should miss the mark altogether, if I did not add that the borders are prepared with great care; for Tea roses will not

endure damp at the roots in winter, and they require a light, rich soil. First, then, along the centre of each border is laid a drain to carry superfluous water



INTERIOR OF ROSE-HOUSE.

quite away. These drains communicate with the main drain which passes the house, and thus all stagnation of water in the soil is prevented. Over these drains is laid about six inches of broken brick and tile, and then twenty-four inches of soil, consisting of thin slicings of turf from a loamy pasture previously laid up and the grass quite rotted, hot-bed dung, leaf mould, the top pulverized crumbs from a bank of clay, and old plaster broken fine, equal

parts all through. It is full of nourishment, firm and yet light, and the roses root into it as they do in forest loam in pots ; that is, they make masses of fibre, and no rambling fleshy roots. The cut will show that the roses are planted in three rows, the weak growers in the front, and the more robust kinds on the centre and back of the border. They *are all on their own roots*, which is the best way for free growth, good flowers, and never to be plagued with suckers. They were all planted in August, 1862, and were all small plants in 60 and 54-sized pots. Now they are fine bushes, and several would have reached the top of the house last season if allowed to do so, or encouraged with the help of a few ties or wires. As to the bloom, it has generally been superb. Most of them bloomed well the first autumn, immediately after being planted out.

Though I have remarked that the house is wholly devoted to Teas, I must here say that is not strictly true. After the collection obtained for the house were planted, there was just room left for a pair of roses at one end. There happened to be a pair of Souvenir de Malmaison in full bloom in a part of the rosery which it was intended to alter, and as these would have to be moved some day or other, I put the fork under them on a bright day in August and had them planted in the house in less than half an hour, kept them

sprinkled and shaded, and all the signs they gave of having been moved was the shaking off of a few yellow leaves a week after. They were shaded and frequently sprinkled, and they bloomed till Christmas, and were the first to bloom again the next spring; and they bloomed so abundantly, that they had to be most carefully tied up to lessen the strain upon the branches of the enormous trusses produced. When the hot weather set in these two Souvenirs became touched with mildew, and they were taken up and potted and their places supplied with Teas. These are the only roses that have not succeeded to perfection in the house, but as it was erected for Teas only, I cannot charge them with wilful misbehaviour. As to the management, that consists principally of a daily syringing and a weekly watering at the roots. They have not tasted liquid manure yet, nor will they want it till next season. They are kept in order by the use of the knife and occasional pinching in, and the dead blooms are removed every day.

There are ninety Tea roses planted out in the borders, namely, forty-five on each side, in three rows of fifteen each. In the *front lines*, being weak growers, are Abricote, Archimede, Auguste Vacher, Bride of Abydos, Canary (a lovely rose in bud), Clara Silvain, Duc de Magenta, Elise Sauvage, Enfant de Lyon, Josephine Malton, La Boule d'Or (a gem among Tea roses), Louise de Savoy, De-

vonienensis (comes finer under glass than in the open air), Madame Blachet, Madame Falcot, Madame Halphin, Madame Bravy, Madame Lartay, Madame Pauline Labonte, Madame William, Mirabile, Nina, Nisida, President, Reine de Pays Bas, Souvenir de David, Vicomtesse de Cazes, Semele. *Centre and back rows*—Adam, Amabilis, Belle Chartronnaise, Belle de Bordeaux, Bougere, Buret, Comte de Paris, Comtesse Ouvaroff, Comtesse de Woronzoff, Delphine Gaudot, Eugene Desgaches, Gerard Desbois, Gloire de Bordeaux, Gloire de Dijon, Goubault, Homer, Madame Damaizin, Madame de St. Joseph, Madame Villermoz, Marescal Bugeaud, Marie de Medicis, Marquise Foucault, Moiret, Narcisse, Niphetos, Ophelia, Regulus, Safrano, Socrates, Sombreuil, Souvenir d'Elise (the grandest of all Tea roses, sometimes as large as a breakfast cup, and petals as thick as cardboard), Souvenir d'un Ami, Triomphe de Guillot, Triomphe de Luxembourg. Some are repeated.

In a larger house I should take the vigorous growers up the rafters, and allow them to form festoons. Several of the Noisettes would serve for the same purpose. Ophirie and Jaune Desprez would make magnificent climbers under glass. If it were only possible to build a lean-to then I should prefer the Paxtonian principle, and put Noisettes and Banksians on the back wall. But I would make this a fixed rule, to grow roses and

roses only. There is nothing else that will properly mix with them when planted out; and the reader does not need to be told that when planted out they are much less trouble to manage than in pots, and they grow and bloom with considerably more vigour.

The only difficulty likely to arise in the management of such a collection is an occasional outbreak of green fly. The best way to deal with this, is to fumigate with strong tobacco. I find Gidney's self-acting fumigator* to be the best for the purpose, as it delivers a cool volume of smoke, and the tobacco being ignited by means of a spirit-lamp, there is no labour in using a bellows, as with other fumigators. I always use two, one at each end of the house, at the same time, so as quickly to fill it with a killing cloud. The plants should be as dry as possible when fumigated, and have a liberal syringing next morning.

* Made by Gidney, East Dereham, Norfolk.


Chapter XXX.

Various Modes of Propagating.

1. The first part of the document is a list of names and addresses of the members of the committee.

VARIOUS MODES OF PROPAGATING.

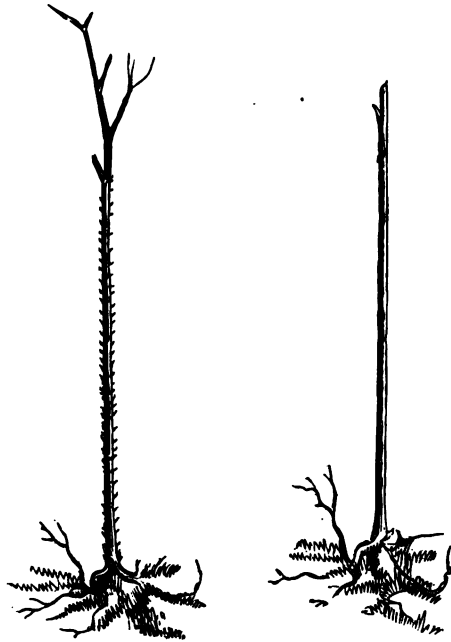
BUDDED BRIERS.

HE Dog rose is largely used in this country in the production of standard roses, for which it is so admirably suited, being of vigorous constitution, and well adapted to nourish by far the larger proportion of all the roses known. These Dog roses, or, as they are usually termed, "briers," are managed so as to produce a few young stout shoots the first season after planting, and the buds of choice varieties of roses are inserted in these shoots. There they soon unite with the bark and wood of the brier, and in due time the shoots from these buds form the head of the tree, and all the shoots naturally belonging to the brier are removed. The brier is called the "stock," and the rose is usually spoken of as the "bud" or the "graft," and the place where the bud is inserted, close to the stem of the brier, is generally described as "the work."

BRIER STOCKS FOR BUDDING.

November is the season to procure stocks, and

they should be got into the ground with as little delay as possible. You must have them of different sizes and qualities, unless you pick from a large number just those that suit you, and pay a higher



BRIER AS REMOVED FROM THE
HEDGE.

THE SAME PREPARED FOR
PLANTING.

price. In sorting them over, give a preference to the straightest green and brown varieties. The lanky dry-looking dark grey sorts are not near so good as those that have a hearty-looking bark, with a stem clean and straight to the head, the colour

being of less importance than the shape and size, and the more fibry roots they have the better. Briers are grubbed up so roughly, that you will probably get few with desirable roots; indeed, they cannot as a rule be had with such roots as gardeners delight in, but with huge woody underground stems, frequently of enormous size, and the older the stocks the larger the tap roots, and the fewer the fibres. The first thing to be done is to sort them as to sizes. The most desirable are those that measure from two to four feet clear in the stem, though stocks of six or seven feet are necessary for forming weeping and climbing standards for special purposes on lawns and walls. Well-ripened suckers of the second year are generally the best and most easily managed. Having laid them out in separate parcels, take a sharp saw and trim up the roots. In this operation a large portion of the tap root will have to be cut away, and in so doing cut so as to reduce it as much as possible without loss of fibres, for, though the absence of fibres is not a very serious objection, the more you have the better, because in the quick root action which most deciduous shrubs make after being moved in winter, the earliest and best roots will spring from those portions which are already furnished with fibres. Wherever a bud may be visible and likely to produce a sucker in the following year, rub it off; and when the roots are brought to neat shape and compass, smooth over

every portion that the saw has cut with a sharp knife. The heads will be trimmed off before you get them, but a little more trimming will be necessary. Remove all side shoots and reduce the stems to such a size as may be desirable, cutting each to a good bud or ring if the bud is plainly marked out close to it, that the bark may close over the cut part in the next summer's growth. But if you are in doubt cut a few inches above where you expect the head to break, and the portion left will be useful to tie the tender shoots to, delaying the final removal of that portion till the graft has taken, and is able to heal the wound over.

Whatever wounds may occur, and every part fairly cut in the trimming up, should be *at once* smeared over with a preparation of half bees' wax and half pitch, melted in a pipkin, and well mixed and melted together. The tops of the stocks may be dipped into the mixture while it is warm, and any wounds on the stem may be smeared over with a brush. This operation is useful as excluding the air from the injured portions, thereby aiding the formation of new bark to cover the abrasions. It is, however, very much neglected as troublesome; and in most cases the wounds heal over by the natural tendency of the plants to establish themselves in a healthy manner. The operation of removing the prickles is usually deferred till the season of budding; but it is better done at once, for at budding

time the plants do not so well bear handling, and any wound causes an escape of sap, and the atmosphere is very destructive when acting on the exposed inner bark of the rose.

In planting it is as well to economize space, for stocks need occupy but little room the first season. Take the sizes, and if possible make a row of each, or make two rows of each size, placing the rows in pairs, and leaving alleys between each pair only, so as to operate on each pair from the side next each alley. The best sizes for general stock are for the first row one foot, which make nice low border or pot plants ; next eighteen inches, then two feet, two feet six inches, three feet, three feet six inches, and four feet for the last row. Any taller stocks planted for special purposes should be most carefully selected. Unless very strong and quite ripe they will not have sufficient vigour to take buds until perhaps the second season, or may in spite of you break half way down the stem, and compel you at last to cut them over equal with some of the dwarfest. When planted in rows, you need only leave space between for moderate freedom of action in superintending and managing ; and in the rows they may be six or nine inches apart, the tallest not more than a foot at the most. Having planted them drive a firm stake at the end of each row and run a lath or hazel rod along, and to the rod attach the head of each by a safe fastening. They will then be secure against

wind, and kept neatly together for economy of space and facility of cultural operations.

Supposing adverse influences to work against you stocks may be planted as late as February or March, or even to the middle of April ; but every day's delay after the first week in November is a day lost, not in time merely, but in the strength and life of the plants, and in the chances of ultimate success. The later they are planted the later they break, and the more gaps occur from the presence of dead sticks in the rows.

ENTERING THE BUDS.

As soon as the stocks begin to throw out shoots look over them occasionally, and rub off every bud that shows below the head, unless the top of the stock produces no shoots, in which case wait a little ; and if the head is evidently weak, but a strong bud appears on the stem, cut the stock down to that bud, and let it push. One or two others will be pretty sure to appear in the vicinity, and you will probably get shoots for working, though at a lower height than the row to which the stock belongs. If a stock appears weakly, and has been already shortened sufficiently, it is sometimes advisable to let a few superfluous shoots remain ; for though they use sap they nevertheless help to increase the size and strength of the stock, for it is by the elaborating power of the foliage that wood is formed. At the

same time, the best general rule is to allow only such shoots to remain as are really wanted. Two good shoots, well placed, are sufficient.

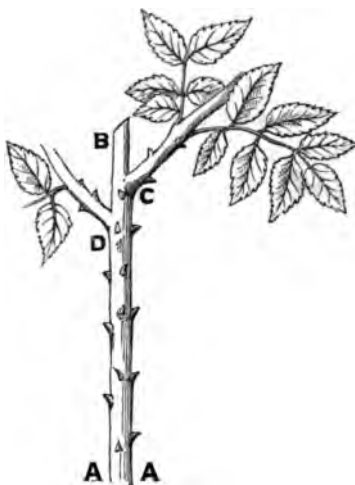
The best time to bud roses is from the middle of June to the end of August. The sooner it can be accomplished safely the better, but it is quite useless to attempt it unless the stocks are in a vigorous state and the sap rising freely, a condition indicated by the bark parting readily from the wood. After rain this happens with more certainty, and if the weather is cloudy there will be less evaporation, and hence fewer chances of failure. During heat and drought it would be folly to attempt the operation, and even if a heavy watering be given previously the bark will not part so easily as after rain ; and unless the bark of the bud and that of the stock be brought into conjunction quickly, and at a time when there is plenty of sap in the latter, and the atmospheric action somewhat reduced, there is the smallest possible chance of success. Choose cloudy weather, therefore ; if immediately after a soaking rain all the better, and let the operation be performed either very early in the morning or in the evening.

As to budding generally the stocks should be in a state of vigorous growth, with two or three strong shoots each, and those shoots still in a growing state, and the wood not yet ripe and hard. The intending operator should bear in mind a few cir-

cumstances that influence the operation for good or harm. Thus, in hot dry weather, with an east wind blowing, the buds are much more likely to fail than in close moist weather, when there is little evaporation. Still more important is it to remember that the briars cannot be in too vigorous a state, and that whatever checks their vigour interferes with the bud "taking;" or if it "takes," interferes with its after-growth. For if all the circumstances are favourable a well entered bud will begin to grow in a fortnight or three weeks after being entered; and will make a hard ripe shoot long before winter, from which of course the head is to be formed the following year. Now, what is most likely to check the growth of a stock at budding time? Why, that common operation of pruning in the wild growth, which is generally practised by rose-growers under an impression that it throws the vigour of the shoots into the buds entered at their base. It is a great mistake to cut back the shoot to be worked, though in practice some shortening is generally necessary for convenience, for it is impossible to enter the buds neatly and quickly with the head enveloped in a thicket of thorny sprays. In using the knife, therefore, for the mere purpose of getting in among the stocks conveniently, let it be borne in mind that the more the shoots are cut back the more is the flow of the sap checked, unless they remain for a time untouched, so as to throw out side

shoots, by which time the sap will be in full flow again, and the buds will take as quickly as if they had been entered in the first instance without pruning back the shoots. Choose dull damp weather ; if possible, cut only as many scions as can be made use of at once before the leaves flag ; and take especial care to tally every one correctly, so that the next season you may know exactly what your stock consists of.

Now, as to the particulars of the operation. The best heads are formed of one bud only, but to make more sure it is best to enter two or three, as if one fails the season is not thereby lost. It is best to limit the work of each brier to two shoots, and if both take, to remove the upper one by a clean slanting cut through the stock over the lower bud, as the head of the brier then heals over neatly, and the rose will last a lifetime. Many of the worked roses, through the want of attention to the healing of the head of the stock, soon get decayed half through just where rose and brier are united, and the consequence is a languid growth at top and forests of suckers. The cut annexed represents a brier with two shoots fit for working—AA, the stem of the future standard rose ; B, the top of the stock as pruned back last year, when planted in the nursery bed ; c and D, the two shoots in which buds are to be inserted, D being the one we should prefer to form the head finally, because the stock



can be cut through immediately over that shoot; whereas, if the head remains as now, B will die back to c, and between c and d there will some day be a half thickness of dead wood, which is unfavourable to the forming of a head from c, but is entirely removed by a clean cut through the stock immediately over the base of d, which, if performed next April, May, or June, will heal at once, and retain a flow of sap through the whole thickness of the stock at its junction with the head. We need say no more about the stock except that the buds are to be entered on the upper sides of the two shoots, c and d, as close to the base of each shoot as possible; and that if the cutting back of those shoots can be avoided till after the buds have taken, they will take

more quickly and securely. Nevertheless, a moderate shortening is generally necessary for convenience.

A man who has both stocks and roses in the same garden, can choose his own time to obtain suitable buds. But the buds must be suitable or the labour and the season will be lost, as if a bud fails it is hardly possible to enter another on the same shoot, though it may be done sometimes by making the incision on the side, or even underneath a vigorous shoot. These, however, are not such good positions as the upper side, from which the bud will start away and grow in a natural position from the first.

Much has been written on the choice of buds, but the truth is in this country the choice is limited, and much more depends on the free parting of the bark than on the nature of the bud, which may be cut from a growing shoot or a flowering shoot, or one that has just flowered but has not begun to push. The French use pushing buds with great success in the month of May, the sorts which succeed by that process being chiefly China, and Noisette, and Banksian roses. But briars in the open ground are not proper stocks for pushing buds, and they should never be used if the scale of the bud has opened so as to show the first incipient leaves. Choose a plump shoot, on which the leaves are large and perfect, and on which the side buds have not yet begun to grow. This will furnish about half a

dozen buds, and the top of the shoot can be put in as a cutting ; so that for every shoot cut three or four briars or more may be worked, and one rose may be had on its own roots. The subjoined cut

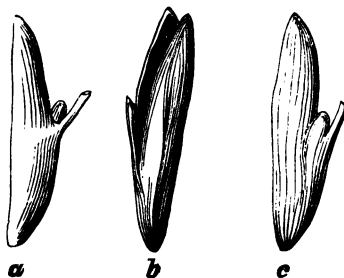


shows how the bud should look, and how it should be cut. A portion of the stem and leaf-stalk is to be cut in the form of a crescent ; if the shoot is very stout, the segment may be a trifle longer than the engraver has represented it.

Take the shoot in the left hand, remove the

leaf, but leave the base of the leaf-stalk untouched ; enter the knife, which must have a keen smooth edge, above the bud ; cut downwards and past the bud, and out again below it. Most amateurs use shields, of an inch or more in length. I prefer to have it not more than half an inch in length, but it requires some practice to insert them so small.

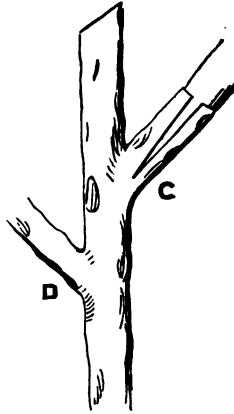
You have now removed a bud, and with it a segment of wood of this shape), and the cutting has the appearance of *a* in the next figure. You have now to remove the wood from the bud, which is a nice operation, and not easily described. Sometimes a touch with the thumb-nail of the right hand, the bud being held in the left, will suffice to effect a



separation between wood and bark, and then the removal is easily effected. Some people use a quill cut like a toothpick to act as a scoop to remove the wood, but no one will ever become a rose-grower by help of such contrivances. The back of the point of the budding knife may sometimes be required to

loosen the bark, first at the upper end of the shield, and then the finger-nail will do the rest. The cut *b* shows the wood in process of separation from the bark; and *c* is the shield, that is, the bark with its bud and a fragment of the leaf-stalk, ready for insertion.

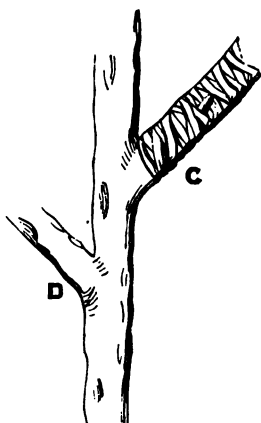
The shoot of the stock in which the bud is to be entered must have an incision made close to where it joins the stem, as at *c* and *d* in the cut at page 226,



or as more distinctly shown here, where the shoot is shown with the T shaped incision slightly open, and ready to receive the bud. To make this incision enter the point of the knife about an inch above the base of the shoot, press till you feel it go through the bark to the wood, *but do not cut the wood*; pass it downwards to the point where shoot and stem meet, and then make a similar cross cut to form the top

of the T. Now take the ivory blade of the budding knife, and open this incision so as to lift up the bark slightly, and slide in the shield you have first prepared, and cut the top of the shield so that its edge exactly meets and fits the top of the T incision. It must fit there as neatly as if it belonged to the place it occupies, and the lifted bark of the stem of the T must lap over it, so as to press the shield close to the wood of the shoot of the brier. The next and last job is to tie it up. Worsted is the best binding, but soft bass kept in a pot of water ready for use is nearly as good, and the material generally used. Place the middle of a strip of bass behind the shoot at the bottom of the incision, bring the ends across, and then proceed back and fore to bind it, taking care to leave the bud peeping out, and finish off half an inch or so above the insertion, making it rather tighter there, but not to cut the stem, or squeeze the bud too hard. When done it will have the appearance of the cut at page 232, and your work for the present is done.

All who have attempted to describe this operation have found it difficult, and perhaps even now I may have failed to make it as plain as I desired. The fact is, the operation should *be seen* once at least. After once seeing it the beginner will soon acquire skill to overcome little difficulties, and at first a few failures are sure to happen.



At the risk of being prolix I will here subjoin directions for the operation, which I wrote some years since for a horticultural journal, and which to some readers may convey an idea of its nature better than what has been said above.

Have your budding knife as keen as a razor, some strips of bass in a can of water at hand, or, better still, some coarse hank worsted. Choose on the brier the best shoot of the year, and from the rose to be propagated cut a strong shoot of growing wood—that is, wood that has not bloomed, and that is without bloom buds.

From this shoot choose a bud that is sufficiently plump to be visible, but it must not have begun to push, or it will never take. First cut away the leaf

from that bud, but leave the base of the leaf-stalk on the stem. Hold the shoot in the left hand and enter the knife half an inch above the bud, and cut slantingly towards the centre, past the bud itself, and bring the knife out again half an inch below the bud. The bud is thus removed from the shoot, and with it you have a portion of the shoot in the form of a crescent, or like the printers' parenthesis mark (, the bud occupying the centre. The pretty part of the operation is to get the wood out from the bark, so as to leave the latter in the form of a miniature boat, with the leaf-stalk and bud attached to the keel. This is called the shield, and this shield is to be inserted under the bark in the stock, where in time it will unite with it. If the bud comes away with the wood the shield is useless, and some kinds of roses are more likely to part with the bud than others. The best mode of detaching the wood from the shield is to hold it between the finger and thumb of the left hand, bark side downwards, and then enter the point of the budding knife between the wood and the bark at that end of the shield which is below the bud. By a little twist and the use of the nail of the left thumb the wood will come clean away, leaving the bud uninjured in its place in the axil of the leaf-stalk. The shield is generally held gently between the lips by the operator, while the incision which is to receive it is made in the stock. If any grit gets inside the bark of the shield the

bud will probably fail, and it must not be wetted inside, and must not be so long exposed to the air as to lose sap.

To enter it on the stock hold the knife firmly in the right hand, and make a straight cut across the shoot that is to receive the bud, the cut to be made as far from the main stem as the length of the shield will require; that is, about three quarters of an inch, or a little more. Then make another slit along the shoot from the stem to the cross cut, so as to form on the shoot the letter T. Turn the knife and enter the ivory blade under the bark at the top of the T, and pass it down under the bark, so as to loosen it from the wood quite to the stem. Then slip the shield, using the leaf-stalk as a handle, under the bark at the cross-cut; thrust it down till it reaches the base of the shoot under the bark, and whatever projects beyond the top cross-cut must be removed by one clean cut of the knife, and so that the top edge of the shield fits exactly to the bark of the upper incision.

It is where these two edges meet that the junction will first take place; hence the top of the shield, when entered, must be cut away to a nicety. The final act is, to tie up with bass or worsted. Begin next the stem, bind it firmly but not excessively tight; and be careful not to displace the bud, or injure the portion of leaf-stalk on it. The bud

itself must not be tied over but be allowed just to peep through, so as to be free to start, and the leaf-stalk must be left free also. Tie above the bud on the under side of the shoot, giving a rather tighter twist at the point where the shield fits to the top of the incision. After having performed the operation two or three times, so as to get used to it, you will have to adopt the better plan of making the incision first and then preparing the shield for it, keeping the scions meanwhile in a can of water beside you ; but in the first attempts, make sure that you can prepare the shield properly before you make incisions in the stock.

A HINT FOR BEGINNERS.

“ Having for many years, for my own pleasure, been a successful cultivator of the rose, especially in the standard form, I am desirous of giving those who, like myself, devote some of their “leisure hours” to the above interesting occupation, a useful hint on an important part in the process of budding—it is in taking out the woody part of the bud before inserting it into the bark of the stock. It is simply this :—take the barrel of a goose quill of moderate thickness, if thin in substance the better, and cut off with a sharp knife one half of the upper part, as if preparing to make a pen ; but instead of proceeding further for that purpose round off the point, and it forms at once what may be called either

a budding scoop or separator. Then, if the bud just taken from the shoot is held leaf downwards, between the first finger and the thumb of the left hand, and the scoop or separator inserted between the wood and bark at the narrow, or what has been the upper end on the shoot, and forced forward with a slight pressure upwards against the woody part, the bud, if from a healthy shoot, will instantly separate in a most perfect and uninjured state, ready at once for insertion into the stock—a quickness which I need not say is important, as success greatly depends on the expedition in the whole operation of budding.”
—Correspondent of the *Floral World*.

A DOZEN PERPETUALS FOR BEGINNERS TO WORK ON BRIERS.

Géant des Batailles, General Jacqueminot, Madame Domage, Mrs. Elliott, Anna Alexieff, August Mie, Souvenir de la Reine d'Angleterre, Jules Margottin, Madame Laffay, Lord Raglan, William Griffiths, Madame Vidot. These varieties are essentials in every collection, and they furnish strong growing shoots with plump buds; there will be no difficulty in obtaining them either from private gardens, or at a small cost from a nursery.

TWO DOZEN MOST DESIRABLE VARIETIES, TO SECURE TO FOLLOW THE FOREGOING.

Hybrid Bourbon—Charles Duval, Coupe d'Hebe,

Paul Ricaut. *Damask*—Madame Hardy. *Hybrid Perpetual*—Baronne Hallez, Baronne Prevost, Madame Rivers, Colonel de Rougemont, Louise Peyronny, Victor Verdier, Senateur Vaisse. *Bourbon*—Boquet de Flore, Aurore du Guide, Queen, Souvenir de la Malmaison, Acidalie. *Tea*—Devoniensis, Gloire de Dijon, Vicomtesse Decazes. *Noisette*—Aimee Vibert, Ophirie. *Moss*—White Bath. *Hybrid China*—General Jacqueminot. All these make fine heads as standards, and in forming a rosery these varieties should be secured first, as they never fail to grow well, and produce abundance of flowers.

TREATMENT AFTER BUDDING.

It must be obvious that an inserted bud is in a very artificial condition, at least for a considerable length of time. It is long before the yeoman stock can fairly agree with his delicate courtly spouse, and unless they both have a little coaxing they may separate for ever, without the aid of a new divorce bill. The first step to prevent this is to make provision for supporting the shoot from the bud, the moment it is of sufficient length for a strip of bass to be passed round it. To the head of the stock tie a stiff short stick, of about the thickness of the finger or less. It must be stiff, so as not to budge a hair's breadth in the most threatening gale. To this stick tie the new shoot as it rises, and see at

all times that your yet but partially united bud is safe against wind.

In very favourable circumstances the bud gets pretty well united in the course of about five weeks, sometimes eight, ten, or more weeks may elapse before the union may be considered good. At all events six weeks after budding the heads should be looked over, and the ligatures loosened a little, or unbound and tied up again with broader strips of bass, and made a little looser than before, but this must be very tenderly accomplished. The best way is to cut with the point of the knife that part of the binding which is just behind the bud, taking care, of course, not to go through to the bark. If the bud is swelling, and the binding appears very tight, this loosening must be done. If the bud seems dormant yet healthy, and the bass only moderately tight, the binding may be left untouched till spring.

Supposing the bud to have taken, the character of the future head is to be determined by judicious pruning and stopping. There must be no undue haste to cut in the wild branches, because any sudden check to the flow of sap will disorganize the tree. But as soon as the sap is down, which happens at the end of October or the first week in November, slightly prune in the wild branches. Some growers cut them close down soon after budding, but beginners must leave them till autumn. Then trim up and shorten in the head, but use the knife mode-

rately and leave the tree neatly shaped, with a head somewhat proportioned to the root. The pruning must be tenderly accomplished, or the bud may be shaken to its injury.

If the bud pushes well in the autumn, it must be stopped by nipping off the top bud as soon as it is six inches long. This will cause its sap to concentrate about the rings of the bark, and in the ensuing spring it will be prepared to throw out side-shoots for the formation of a head. If, however, the head is small, or the position exposed to the north or east, it will be better to let the wild head remain untouched till March, or even so late as the first week in April; for the earlier you prune the earlier will new shoots push, and it is not desirable to force a tree into growth too early for it to make real and beneficial progress.

In March, the most important of all the pruning operations takes place. The wild branches are all cut away *except one bud above the inserted bud*; that is, one wild bud is left on the shoot which was worked, and this is called the *sap bud*, its office being to draw the sap upward, and help the pushing of the inserted bud. The sap flowing freely in that direction to the one wild bud hastens the completion of the union where the incision was made, and the entered bud is likely to make good progress. If no bud but that entered was left the sap might not readily flow to it, and to get rid of its sap the plant

would throw out side-shoots all the way up the stem, and perhaps suckers from the root ; whereas the sap bud draws it upward, and encourages the kind of growth you want. If a knot forms below the inserted bud and begins to push with it, it is well to allow it to remain for a time ; for its presence will frequently assist the inserted bud by promoting a free flow of the abundant sap, but when the inserted bud seems strong enough to use the sap, the wild branch may be removed by a clean cut to its base.

When the March pruning takes place, the last job is to cut the top of the stock close over to the inserted bud, so that no more wild growth can take place above the bud to interfere with the formation of the head. It must be cut at an angle of 45° or 50° , so close to the base of the shoot from the bud that there shall be scarcely the thickness of card-board above it ; for the bud will have to help in barking it over ; and if any length of wood is left above the bud it will either produce shoots of wild growth, or die and eat into the stock, to the ruin of the tree. When cut over, the wound should be covered with clay paint or grafting wax.

The sap bud may now be expected to grow vigorously. It is better if it does so. When it has got two or three pairs of leaves, stop it by nipping off the top with the finger and thumb. Then, as the placed bud prepares to take the lead, cut in the

sap bud a little closer ; but do not remove it utterly till about midsummer, when it may be cut off close to the inserted bud, and that should be the end of all wild growth. Now you have made your roses, and may transplant them in the autumn to their blooming quarters in the garden or rosery.

I must now suppose the reader to be familiar with the art of budding, in order to understand what remains to be said about it. From frequent observation I am satisfied it matters not from what sort of wood we take the bud, whether from a flowering shoot or the growth of the season, provided the *bud* itself is of the right sort—plump enough to be visible, not plump enough to be on the point of opening into leaves, and the bark about it so full of sap as to separate easily from the wood of the shield. There is this advantage in working roses on strong stocks, that we get blooms the next season ; and if the culture is thoroughly liberal and the buds are entered in June, the greater part of the wild wood cut away to force the bud, one season's growth from the bud is enough to make respectable heads. On their own roots they need another year to make a similar effect, and thus, by using foster roots, we steal a march on time. Now, as to the process of budding. Roses differ among themselves as men do, some are tractable, and some are stubborn. Jules Margottin will give good buds from the end of June to the middle of October, but Aimée

Vibert will never give a bud such as a beginner can handle with safety. If you cannot remove the wood from the shield by a neat action of the thumb-nail, or the back of the point of the budding-knife, the nail being the best, let the wood remain, and make of it a summer graft in the same method as inserting a bud. Through not knowing this practice, or not thinking of it at the time of operating, many amateurs fail with roses that make thin wood and wiry buds ; whereas, by retaining the wood the difficulty is at an end, and you may work such a rose while the bud is invisible, especially after heavy rains, when the stocks are full of sap and ready to nourish them forthwith. Another point to be remembered in using plump buds from shoots of the season, the shields of which perhaps are very soft, is this, that a little wood left in the eye is of no consequence at all. When you have peeled the bud there will be an obstinate bit of wood left, to get out which will probably destroy the eye altogether. You must throw that away and prepare another, which may share the same fate ; and if you happen to have but one plant of the variety to be propagated the whole shoot may be cut up, and the chance of propagating lost for the season. Peel the shield as clean as you can without splitting it, and if a bit of wood remains in the eye, there leave it. The grand thing is to unite the edges of the two barks at the top cut, where the union will take place, and to have the

shield pressed close to the wood in the incision on the stock, a result to be obtained only by binding it carefully. Another and still more important point is, not to mind the *apparent* loss of the eye when the shield has been dexterously separated. Immediately after flowering the buds are not always so prominent that you can be sure you have it safe after removing the wood, but be assured it *is* there. Insert the bud, tie such a bud not extra tight, but with an extra thickness of cotton wool to prevent exhaustion by evaporation, and it will come as certainly as the plumpest. Nevertheless, dismissing these exceptional cases, I prefer a visible bud from the growth of the season, and the removal of the wood clean and complete. Example—Géant des Batailles, General Jacqueminot, Auguste Mie, Jules de Margottin, William Griffiths, Madame Vidot, Madame Louise Odier budded at the end of June, 1859, on short stout briers, wild wood all got rid of before winter, moved from nursery quarters on the 15th of May, 1860, had fair-sized heads, a few blooms produced, and nipped off to give them a fair chance of blooming in the autumn of the same year. Mind, they were only moved at such a time to fill up blanks caused by the severe winter, and would have been lost unless shaded with wet mats, except in such a tremendously wet season. As it was, they were only shaded for two or three days, and suffered nothing.

“ Don’t do as I do, do as I tell you.” Another advantage in budding is its certainty. What a perplexing task it is to get plants of *Rosa Alba* on their own roots! Even Aimée Vibert and Ophirie puzzle the amateur propagators; but most of the Perpetuals come from cuttings as readily as *Calceolarias*, and by much the same sort of treatment. The rose that refuses to make roots for itself must be worked, and the fashion of working must be in accordance with the circumstances of the cultivator and the habit of the variety in hand. Look over your briars in June and you will probably see lots of smart green upright suckers, or you may have kept down suckers according to the routine prescribed in the books. I shall call you a wise man if you let all the best of the suckers rise, and I can tell you that for the past seven years, being a little out of reach of good stocks from the hedges, I grow my own stocks from suckers on the ground.


Here is a nice three feet stem, with at least two shoots at top in good positions to take buds. Remove all the other shoots by a clean cut, and shorten in those to be budded, not to cripple them, but so that you can get along the rows conveniently and work at ease. There is also one stout green sucker, which, in the ordinary way on the routine taught in books, must grow another year to form hard wood and side-shoots for budding. Work the two shoots at top with a bud on each, and let it be your fixed

and unalterable law, on the fashion of the Medes and Persians, to form a head from one bud only. At the nurseries they enter two buds, to make assurance doubly sure. You do the same. At the nurseries they let both buds start to get a head quick that will bear a price, but don't you do that. Whichever takes the lead keep, and cut the other clean away. One bud will ultimately form a better head than two, though the first season the two might give you the most to look at. It is important to work them early so as to get a good start the same season, and have the wood well ripened at its close; and if towards the middle of October the new shoot is still growing away, and you see reason to believe it will be soft when the frost comes, nip out the point for the last time; and then take your largest digging fork, thrust it in the earth nine inches or so from the collar of the brier and give it a gentle heave, not to shake it much, but enough to check it, and the wood of that new shoot will ripen in a fortnight.

GUN-BARREL BUDDING.

Now, about these suckers. Run your eye along them from head to foot. Say the sucker is three feet high, at two feet from the ground the young wood is in just the same state of greenness and ripeness as the base of the summer shoot, which you have just budded, on the top of the stock.

Instead of waiting till next season, bud it there at once just under one of the leaf-rings, "gun-barrel" fashion; and six inches higher up on the opposite side, also under a leaf-ring, and with the top of the shield on the line of the leaf-ring, enter another bud, and you will have a fine plant to bloom next season. I never had faith in this gun-barrel working until driven to it this time six years on receiving from a friend some scions of roses I wanted, at the very moment when every one of my proper briars were weighted with as many as they could carry. Thinks I, I've read a good deal for and against this plan; now I'll try it on the little rejected green briars, and the suckers of the strong ones. They made beautiful plants, and as to the operation it is as easy, or easier than the usual method of working on a shoot. Make an incision like the letter I on the stem, then a cross-cut on top to make the usual T, but let the incision and the shield be a little longer than usual with top-shoots. In fact use the largest shields you can get from very plump rods, to suit the robust nature of the wood you work on. Tie up and tally; in fourteen days loosen; in a month from entering remove the binding, and you will be surprised at the growth of the new shoots. They will soon distance those entered in the usual way on side-shoots of hard briars. Thus brier and rose begin the world together. There is no conflict between youth and

age, and the junction is rapid and complete. Of course the side-shoots must be nipped in, and in November removed altogether, and the stem cut back clean over to the topmost of the two entered buds. That topmost bud will probably not unite so well as the one lower down. The first summer after the budding it can be cut clean back to the lowest bud, and will heal over at once, and the growth of the head will be all the better for it; for, as in the former one, one bud is quite sufficient. But, to get that worked sucker up with good roots, there's the rub. Just don't think about that, if it is the right sort of plump green brier for the purpose. By removing a little of the earth from the collar, you can pretty well judge whether it comes direct from the stem of the parent brier, or from the root stock under ground. If it comes from the old stem trace it to its source, pass your finger under the bend close to its junction with the collar of the parent brier; and having made a clear way for a small knife, cut a small notch in the under side of the shape and size of this . Fill in the hole with gritty stuff or a spadeful of leaf-mould, and it will be sure to make roots for itself long before November. Then separate it and plant it as an independent brier, on which at least one season has been saved in its final progress to the rosery. If the sucker comes from the root-stock it is sure to have plenty of fibres when November comes, and therefore needs

no preparation. Remove it then, and plant it with the rest. On this plan instead of suckers being a nuisance they may all be turned to account, and your roses multiplied into dwarfs and standards, according to your wants and the materials at command.

MANETTI ROSES.

But the brier, though the best stock for all general purposes, is not the only one available. The Manetti is the best stock for free-growing roses on soils unfavourable to the brier, and where roses on their own roots would starve. Nevertheless, the Manetti does well on stiff rich heavy soils, and is perhaps more adaptable in its nature than any variety of rose in cultivation. People ask what it is, and where it comes from. Mr. Rivers disposes of those questions in a few words in his "Rose Amateur's Guide." He says :—" I received it some twenty years since from Como from Signor Crivelli, who recommended it as the very best of all roses for a stock. It was raised from seed by Signor Manetti, of the Botanic Gardens at Monza. All the roses I have budded on this stock have succeeded admirably." The best of this stock is, that when once the bud has taken possession of its sap it ceases to throw up suckers ; which, however we may turn to account in nursery quarters, are in the rosery a nuisance. It may be worked later than any other stock, and if September pass by and you have lost the

last chance of budding, then you can wait till March and graft your roses on its roots. Manetti's, however, will not make standards. They must be worked as close to the ground as possible, and at the final planting the base of the shoot from the entered bud must be planted below the ground level to give the rose a chance of making roots for itself, which it will generally do, but *not always*. For chalky, gravelly, and sandy soils this is invaluable.

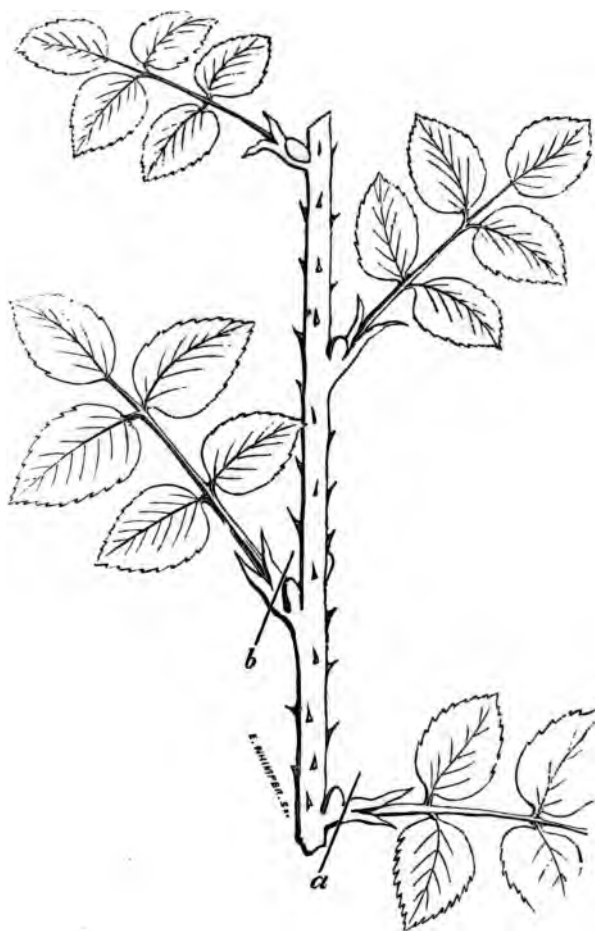
OTHER STOCKS FOR ROSES.

If there be neither Manetti's nor briars in the garden, you still have probably one of the best of stocks in that old favourite, the Maiden's Blush. What an excellent habited rose that is! Does not push out suckers at a great distance like common moss, or cabbage, or brier, makes roots freely, takes a bud of almost any kind, whether shy or free, and never overpowers the bud with its own growth, although it is a robust grower. Next to that place the China rose, Descartes, also excellent for all the Chinas, especially such as Mrs. Bosanquet and others of delicate habit. Felicité Perpétue, again, is another good stock; and if you get a clean, straight stem of any of the common order of free-growing roses, you may make a standard of it as easily as with a brier. In fact, you may work upon any rose that you have plenty of. But as a rule work near the ground, and aim at dwarf plants, un-

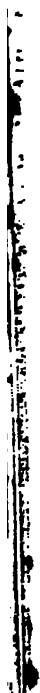
less your stems for standards are of very clean growth, and the varieties such as are not given much to suckering.

ROSES ON THEIR OWN ROOTS FROM CUTTINGS.

After all this, in loamy soils the majority of good roses do best on their own roots, and to make good beds and for the fronts of mixed borders standards are by no means the best plants. Let every amateur set his heart and his hands on the task of raising roses on their own bottoms, as a more worthy enterprise than by either budding or grafting. When you take off a fine rod to get a few buds, the top of it, say five or six joints long, will make the best possible cutting. If the top is very soft cut it away, and prepare the cutting as here figured. A clean cut under the lowest joint, the leaf from that joint *a*, and the next joint above it *b*, removed, a thumb pot with a few small crocks, a mixture half sand and half leaf-mould, pressed in moderately; the cutting thrust in till its base is hard upon the crocks, a bit more compost to fill nearly to the rim, and another pressing to make it tight and firm; a good watering, a cold frame, with bottom of coal ashes, all shut down close, and a mat over to prevent mischief from sunshine, and it will be downright strange if every one so dealt with does not make a promising plant; to be shifted into sixties with proper rose compost, and to be



PREPARATION OF CUTTING.

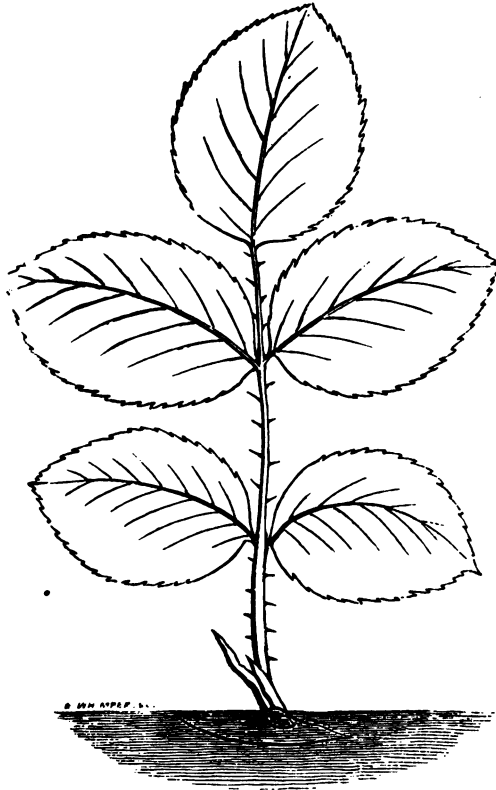


wintered in pit or greenhouse. If your pits and frames are already overstocked, creep in among the currant bushes, level a piece of ground in a shady place, pack the pots together in circles, and put a bell-glass or a hand-light over each lot ; give air by degrees, and watch them that their new shoots are not attacked by vermin, and you will soon see that there is no magic or mystery in propagating roses, for the million and by the million.

HOW TO STRIKE THEM FROM BUDS.

But the millionaire method is yet to be described. Instead of cuttings use buds, and you have in hand the prettiest process in the whole range of practical horticulture. Take a shoot, such as would be chosen as a scion for budding. Have some shallow pans prepared with crocks, leaf-mould, and sand, and one inch of pure sand on top. Better still, use turfy peat, with the same inch of sand on the top. Cut away the best buds, in the same way as if they were to be used for budding (p. 228), but let the wood remain and let the leaf remain, as shown on next page. Plant each of these shields bud upwards, leaf complete, bark just covered, so that the bud stands up very firm ; waste no time ; as soon as the pot is filled, so that the leaves just touch all over, give a good sprinkling of water, put on the bell-glass, and go on again. The tops of the shoots may be put in quite close together as

cuttings, with the two lowest leaves removed, and the wood cut clean under a joint. Put them in



shallow pans,* put on the bell-glasses, and very

* The pots made by Pascall, West Kent Potteries, Chislehurst, Kent; also sold by Messrs. Hooper and Co., Covent Garden, are very convenient for this purpose.

few will fail. Buds treated this way start in the same manner as grape-vine eyes, only grape-vine eyes have no leaves to help them. Pot them singly into thumbs as soon as they begin to put out white roots from the callus, or you may even pot them as soon as the callus has become definite and firm. Shift none from the first potting till the roots begin to peep out through the crocks, and not even then, if the season is far gone, unless you can give them a shelf in a warm house. It is best to winter these in a pit or greenhouse. They make beautiful plants, and can be grown to any shape or any size of which the variety is capable. The last lot I struck from eyes in this way were put in an old frame on a great heap of waste fern and moss, full in the sun. A mat was kept over all day, and removed at sunset. A week afterwards, the light was tilted to give a little air, and they came wonderful quick and strong, the fern being like a hot-bed. Out of two and twenty pans covered with bell-glasses, all succeeded but one, and that one the ants got into, and filled the bell-glass with the *débris* of their mining operations, burying the buds six inches deep.

PROPAGATION BY CUTTINGS IN AUTUMN.

Instead of a few coddled, dwindled specimens of struck cuttings of the rose that so often serve to satisfy the amateur gardener, who has hitherto only

attempted the propagation of that delightful flower in pots and in heat, let me briefly tell him how to secure plants by the hundred, or even thousand, if he please, with as much certainty as he produces his hundreds of Tom Thumb geranium.

In the latter part of September or first week of October go over the rose beds, and cut off all the straggling shoots; cut them up into cuttings (excepting the soft points) about six inches in length, or more if the eyes are far apart. Having previously dug and well broken a piece of ground, and then put upon the surface a good dressing of sand, which slightly stir in, tread the ground evenly all over, and smooth the surface; then take a spade, and begin at one end to open a slight trench; then place a row of the cuttings in, about three inches apart, after which close the soil closely upon them; then open a second row at about six inches from the first, and proceed as before, and so on until all are planted. By autumn of the next year they will be nice plants, if occasionally stopped when freely growing during the summer.

I knew a nurseryman who used to put in his winter prunings of roses in this way, and was content if he got one in three or four to grow. Had he done as now recommended, he might have made sure of nearly all. He waited till the growth had quite ceased, and hence his partial failure; whereas if the cuttings are made whilst the sap is still in

motion, a callosity is formed before winter, and the cutting is able in consequence to resist the inroad of too much wet during winter, which keeps it from rotting.

In October, 1863, I inserted a lot of short cuttings of *Géant des Batailles*, *Jules Margottin*, *General Jacqueminot*, and other of the most useful roses, in a bed of leaf mould in a pit, from which the lights were removed; they had no water, and, in fact, no attention, except at the end of November the lights were put on and kept on till the bright weather of April, 1864, compelled their removal. The pit was then full of nice healthy plants, nearly all showing bloom buds. The best were lifted with a trowel, potted into forty-eight sized pots in rich soil, half rotten dung and half turfy loam; they were then placed in the greenhouse, and on the 8th of May the first bloom opened and a few days afterwards they were all in bloom and with their bright clean foliage made a charming spectacle. I suppose this to be the simplest of all methods of propagating roses on their own roots.

CUTTINGS STRUCK IN SPRING.

Rose-growers are annually horrified at the idea of having to waste the spring prunings. The important principle of having the sap in full action before taking cuttings has a capital illustration in the propagation of the rose. Wait till May, and

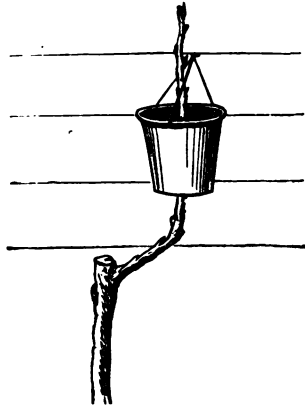
then take cuttings from roses in a house where they have been forced, and are going out of bloom, and you ought not to lose more than one in a thousand. But take prunings in a dormant state, put them over heat, and they are almost sure to perish. That peculiar process, the formation of a callus, which *must* take place before any cutting can throw out roots, requires the sap to be in very free flow, for the callus is formed of sap in the downward course. I do not say that it is impossible to strike the prunings of roses, because it is done every year at the rose nurseries, where they never waste one inch of anything that will make a plant; but no amateur would ever succeed in raising plants to pay for the trouble of picking up the prunings, and tallying the sorts. The only chance is with a brisk *dry* heat. The cuttings to be in sand, only the heel of each touching a hard tile, and the tops to be kept alive with an occasional sprinkle from the syringe. Lay the cuttings in a row across the bed of a propagating tank. Run under the upper ends a thick rod or a couple of laths to raise them to an angle, then cover the ends or heels with the sand, and keep the heat to 70° or 80°, till they root or wither. Of course, moisture must be supplied; let it be in the form of a daily sprinkling of the tops, with enough moisture in the sand for the heat to rise, and no more. If to be tried on a dung-bed, the heat should be fierce, and

the cuttings might be thrust in in bunches aslant. If in either case they callus properly, the tops will suddenly exhibit a healthy plump appearance, and the buds will begin to start; if they are failing, the leaves will begin to fall off, in which case it will be found, on uncovering them, that they are turning black and hastening to decay.

CIRCUMPOSITION.

This method is adopted to cause a growing branch to make roots in a pot without removing it. It is applicable especially to roses and vines, and many other subjects that make long shoots, such as can be drawn through a pot. I have frequently got plants of Teas and other delicate Chinas by this process, which was largely practised by my father, who taught me how to do it when I was twelve years of age. There is now in my garden a seedling Bourbon of some character, worked on a brier; it had a grand head when the winter of 1860 caught it, and killed it back to one bud. That bud started the next summer, and made one weak rod; and having no other plant of the variety, I secured it on its own roots by circumposition. To make very sure, the tree was planted beside the wire trellis on which espalier apples are trained. To the trellis I fixed a forty-eight pot by means of copper wire, then drew the single shoot through, having first removed the side shoots that were in the way, and

filled the pot with a light sandy mixture. In the autumn a sharp knife was passed through the shoot under the pot, and the latter removed with the rooted rose in it. This is a mode of propagating



which may be applied in various ways. First select the shoot to be rooted, then make a notch just to the wood on one side at a point convenient for its rooting in a pot. When the notch has healed, place the pot so that the branch comes through it, put either a tuft of moss over the hole or a handful of crocks, and fill up with light sandy soil, say bits of old turf of the size of walnuts, chopped moss, and silver sand; keep it watered, and roots are sure to come in time. No leaves or pushing buds should be covered; better to rub them off.

If a trouble to draw the shoot through the hole

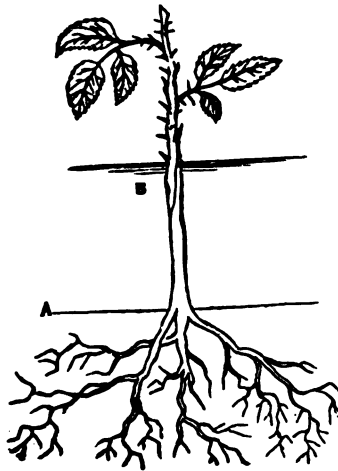
in the pot, owing to the size of the leaves, break the pot in half, and then bring the parts together, and bind them with copper wire. A stake or the stem of the tree to be rooted will support the pot,



or if the plant to be propagated is in a pot, put it under a shelf on which the circumposed pot will stand. Another way is to peg the shoots down on pots all round the parent plant; a capital plan for Teas and Noisettes.

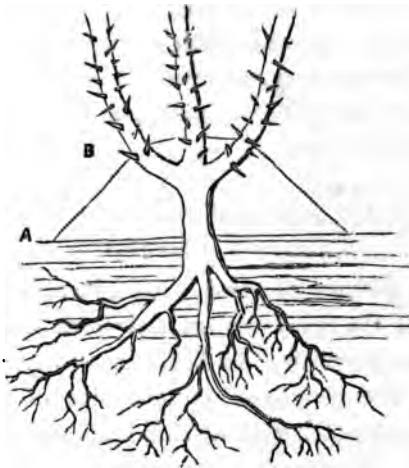
**A NOTCH FOR AMATEURS.—HOW TO MAKE THEM
PROPAGATE THEMSELVES.**

Every planter of roses should be able to tell at a glance if the roses are on their own roots, or if worked on Manettis. Look for the “work” at the collar of the plant, and on the side of the stem make a small notch with a sharp knife, as at B in the



A original ground line. B present ground line.

above cut. Plant the root so that this notch will be an inch and a half below the surface, and in filling in



round the roots, take care to place a trowelful of quite dry sandy soil immediately around the notched part. The notch will soon heal, being surrounded with dry soil, and will then throw out roots; and you will have accomplished the feat of changing a worked rose to a rose on its own roots, with the least imaginable trouble. Apply the same practice to roses of all kinds that fork near the ground; make a notch in every one of the shoots on the



under side, so that when from the incisions roots are thrown out, it will be an easy matter to cut them apart and make a plant of every one. Roses that branch away from near the roots may be operated on without disturbing the roots; and if some sandy stuff is heaped round nature will do the rest, and form large mats of roots before next winter. You see this is capable of many variations. It is, in fact, itself but a variation of the system of

layering and circumposition. I have occasionally struck Chinas in the way represented on page 263. I first cut a few inches of the softest growth from the point of a shoot, then strip off the leaves half its length, then bend it, and thrust it down into a plunged pot, where it is fixed with a peg. Nothing can be simpler for people who have never practised propagating. The pot is soon full of roots, and the inserted buds throw up rooted suckers.

GRAFTING BRIER STANDARDS.

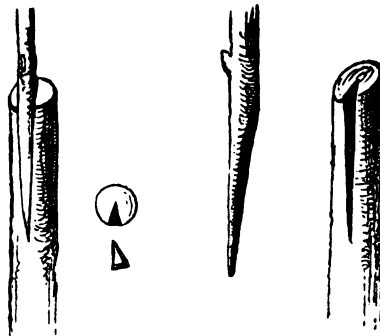
This plan may be adopted where buds of the preceding autumn have failed. To succeed, the sap must be rising freely in the stocks, as indicated by the swelling of the wood and buds, and the stock must be in advance of the scion, that is, in a condition of greater vigour; and to insure this condition the scions are cut some time before they are to be used, so as to reduce their strength, and fit them to take up sap from the stock.

In grafting roses, the wedge graft is the best mode, and it is, perhaps, the easiest of any. The stocks should be in good condition, well rooted, and *about* to grow vigorously. In February, procure the scions. If you have some good roses from which you can take scions, cut off with a sharp knife some strong shoots that have not begun their spring growth, cutting them their full length; tally each lot of shoots as soon as taken, and tie in sepa-

rate bundles those of different kinds. These must be kept alive for some weeks with great care, and the best way is first to cut off any of the top buds that are open, and then to stick the thickest ends of the shoots into moist clay, pressed tightly to them, and place the whole in pots of moist mould, and stow them away in some dry shed or cool greenhouse, where they will not be subject to the action of sun, rain, or wind ; they may be kept just moist for three weeks, and if they are in a very dry place it will be as well to strew a little damp moss amongst them.

At the expiration of three weeks, those least fit for grafting will be shrunk, and must be picked out and thrown away ; but the best will be still plump, and in a desirable condition for use. The first week in March is the best time in most seasons for rose grafting. The stock is cut over horizontally, and a slit or wedge made in it vertically, one and a half or two inches long, a strong sharp knife being better than a chisel for the purpose. It must be a clean cut down the centre of the wood, without any jaggings or tearing of the bark. As soon as the slit is made, take the scion in the left hand, cut away the portion that was buried in the clay, and cut away from the head of the scion as much as may be necessary to reduce it to two or three good buds in the middle of the shoot ; then cut the lower end to a long wedge, proportionate to the length of the

slit in the stock, and with the lowest bud only just above the top or thickest part of the wedge. No dirt or chips must be about either of the cut parts, and the bark must be as whole and untorn as possible, not a scrap removed beyond what comes away in cutting a clean wedge. Now open a slit in the stock by means of a hard wooden tally or ivory wedge, and holding the thickest part or front of the scion outwards, insert it in the slit, and



allow the stock to close and pinch it; they ought to fit very neatly, and the inner bark of the scion ought to touch the inner bark of the stock all the way down, and the outer bark of each should meet neatly down the outside of the cleft. Now prepare another scion in the same way, withdraw the ivory wedge, and insert that on the opposite side of the stock, and in the same way proceed till you have three or four scions inserted, though a couple will

be enough for middling-sized stocks, and in the first attempts no more should be tried.

In binding up, it will be best to use broad strips of good bass, and to pass it round so that it shall be impossible for the scions to shift, either owing to the weather, or the swelling of the stock, or the accession of a flow of sap. When neatly, but not too tightly, bound up, cover the whole over with grafting clay, to exclude the atmosphere entirely from every portion that has been cut. Of course the cleft in the centre of the stock between the scions must be bound over with bass to prevent the clay from touching the split wood, which will unite in time by the flow of the sap. A bundle of soft moss should then be tied round the head of the stock and the scion, still further to defend both from the atmosphere, and preserve moisture to the bark. In dry weather the moss must be occasionally wetted; but if the water trickles through any crevice in the clay or bandages, and gains access to the head of the stock, it will do much mischief, and may cause the loss of the scions. Grafts inserted near the ground may be covered with mould after the clay is put on.

Grafting completed, you have now to hope for a speedy union and the perfect healing of the wounds that have been made. About midsummer, remove the clay and loosen the ligature, and apply a coat of mixture, leaving the point of the pushing bud

free. This must be done just after rain, when the clay will be soft and easily removed, and the scion in a condition not to feel a shock from exposure to the air. Any grafts that have not taken should then be cut away, and every portion of dead wood on the stock where it has been worked cut clean away to the scions that have taken, and the wounds covered with mixture; but if all fail, knock off the clay and cut the stock down to the first wild branch that has broken out below the graft, and thus get a new head to bud upon in the autumn. But there must be no haste in inferring that the graft has failed; they sometimes lie dormant a long while, and then push vigorously. At all events, as long as the bark and buds of the scion remain plump there is nothing to fear, and when once a good leaf opens on the scion the union hastens, and ultimate success is certain.

Those who are practised in grafting usually have their favourite methods for various subjects, and it really does not matter by what particular method roses are grafted provided the work is properly done. I have often amused myself by potting, in autumn, a lot of the small suckers that sometimes rise at the base of a brier. These potted suckers make nice stocks to graft in spring with shoots of roses selected of exactly their own thickness. The saddle graft is the best for these small stocks. They are cut close over near the rim of the pot; the head

is then cut to the shape of a wedge, by taking a slice off each side, the graft is cut to fit it, and after being tied with bass and painted with grafting wax,



they are placed in a warm damp part of the greenhouse or stove and they unite directly. The grafts ought to have only one or two buds each.

GRAFTED DWARFS ON MANETTI AND OTHER STOCKS.

From the first week of February to the end of March, is the best time in the whole year for grafting Manettis. Those who do not possess it must buy a few to begin with, and keep up a supply by putting in cuttings or layering the shoots every year. Rosa Manetti is a rampant grower. If left alone it makes a number of long shoots, and will

soon reach the top of a nine feet fence ; to which, by the way, it will contribute very little in the way of ornament except a plentiful foliage of a light lively green. The merit of the Manetti rose is that it makes abundance of fibrous roots, and is the least particular about soil of any rose in general use. It is thus a good feeder to show roses worked upon it. But Manetti is not the only stock available for dwarf roses. All the common Cabbage, common Moss, common Damask, Maiden's Blush, and other old-fashioned roses that are now treated with disdain because of the superior beauties of Géants, and Generals, and Queens, may be used for grafting on them any of the vigorous growers among the best of named roses. The well-known evergreen climbing rose *Félicité Perpetué*, and the common *Boursault*, are also as good stocks as any ; and, in fact, any rose that roots freely may be turned to account, and if not already productive of good flowers may be made so by grafting first-class varieties on them.

The practice has this advantage, that it is the easiest of all the grafting operations, so easy that lads of fourteen might be made first-rate propagators in this department with one day's teaching, and a few roots and grafts to waste over their first practice. Suppose we take a Manetti from the ground, shake off the soil, and cut it back to one short stem three or four inches from the collar. We

have next to cut a slice out of one side on which to splice the graft, and this slice should be about an inch in length. There is no wedge, notch, chink, or tongue required. It is a simple case of splicing, and unlike some other kinds of splicing the parties are sure to agree, and set at nought all the provisions made for cheap divorce. Having cut the slice down to the wood and no deeper, cut the top of the stock over horizontally, and square off the lower part of the cut to make a ledge on which the bottom of the graft will rest, while the top of it is cut horizontally to form a shoulder to rest on the top of the stock.

Having prepared the graft and stock fit them together, tie firm with soft bass, and plant directly; but in planting put the grafted plant in *deep enough to cover the junction of scion and stock with one inch depth of soil*. This is the first practice. The knife is used vertically and horizontally, and two buds only are used for the graft. When brought together the edges of the two barks ought to fit correctly, especially at the top.

In the next practice, instead of cutting horizontally cut aslant, and at about the same angle as in pruning. This style of cutting can be performed more quickly than the other, but as the fitting is not quite so easy, we recommend beginners to practise the first method before attempting the second. But in the second practice, instead of

using scions of two buds, they may be cut with four, as the work will now be performed more quickly and neatly, and the scion will be less exhausted by exposure to the air during the operation. The simplest, cheapest, and most offhand way is to take up the stocks in batches, cover their roots with a wet mat, keep the scions in a wet mat also, and removing them as required to perform all the grafting indoors in the evening, replacing them between wet mats as they are tied up, and planting next morning with the grafted part an inch at least below the level. But in this plantation there will be a few failures and many suckers, and this brings to the next practice, for which, indeed, preparation ought to have been made the year before. We want the stocks now established in pots, and all their last year's growth still unpruned. Now take your strong potted Manetti or Boursault, cut it over as close to the rim of the pot as will be convenient for the operation; put on the graft, tie carefully, and arrange them all on a bed of coconut dust over a cool tank in a forcing pit, and when all are placed strew between them more of the same material till the ties are all covered. After the lapse of three days get up the heat of the tank to 60°, and keep it at that for a week, taking care that the plunging stuff is nicely damp. After another week has elapsed raise the heat of the bed to 70°, and keep it at that for three weeks, in the

meantime sprinkling frequently to keep a moist surface. After this the heat may go down to 60° again, and the shading may be removed. Six weeks from the date of grafting they may be taken out and the ties removed, and taken to a cool pit to harden. By this time, some will be showing bloom; nip out the bloom and keep them growing, and if they like to bloom after August, let them. At the end of the next May any of these may be planted, and the graft is to be covered with at least two inches of soil, so as to have a chance of making roots of its own, if it is so disposed. If there be any doubt about the sort of wood to be used in any case, then we have only to say reject all soft, sappy shoots, and the points of all shoots, and let graft and stock be as nearly as possible the thickness of a common lead pencil.

SELECT LIST OF ROSES.

1. A SELECTION OF ONE HUNDRED OF THE FINEST VARIETIES OF ROSES FOR EXHIBITION.

(*This List includes some of the Newest.*)

SUMMER ROSES.

Hybrid Provence—Comtesse de Segur, Princesse Clementine.

Moss—Common Crested, Gloire des Mousseuses, John Cranston, Laneii.

Gallica—Boula de Nanteuil, Gloire de Colmar, Grandidissima, Transon Goubault.

Hybrid China—Chenedole, Leopold de Bauffremont.

Hybrid Bourbon—Charles Lawson, Coupe d'Hébé, Paul Ricaut, Paul Perras.

Damask—La Ville de Bruxelles, Madame Zoutman.

AUTUMN ROSES.

Hybrid Perpetual—Alphonse Damaizin, Alphonse Karr, Anna Alexieff, Baron Adolphe de Rothschild, Baronne Prevost, Beauty of Waltham, Belle de Bourg la Reine, Charles Lefebvre, Comtesse de Chabrilland, Deuil de Prince Albert, Duke of Cambridge, Duc de Rohan, Empereur de Maroc, François Arago, Françoise Lacharme, Geant des Batailles, General Washington, Gloire de Santenay, John Hopper, Jules Margottin, La Ville de St. Denis, Lælia, Lord Macaulay, Lord Clyde, Lord Raglan, Louis XIV., Louise Darzins, Madame Alfred de Rougemont, Madame Boutin, Madame William Paul, Madame Charles Wood, Madame Domage, Madame Furtado, Madame Knorr, Murillo, Madame Vidot, Mademoiselle Bonnaire, Maurice Bernardin, Monsieur de Montigny, Mrs. Rivers, Olivier Delhomme, President Lincoln, Prince Camille de Rohan, Princess of Wales, Prince Leon, Victor Verdier, Vanquier de Goliath, Sœur des Anges, William Griffiths, William Paul.

Bourbon—Acidalie, Baron Gonella, Bourbon

Queen, Baronne de Noirmont, Catherine Guillot, Docteur Leprestre, Louise Margottin, Modele de Perfection, Souvenir de la Malmaison.

Tea-scented—Adam, Comte de Paris, Devonienensis, Gloire de Dijon, La Boule d'Or, Madame Damaizin, Madame Willermoz, Madame William, President, Souvenir d'un Ami, Souvenir d'Elise, Triomphe de Guillot fils.

Noisette—Cloth. of Gold, Celine Forestier, Lamarque, Solfaterre, Triomphe de Rennes.

China—Clara Sylvain, Madame Bréon, Marjolin, Mrs. Bosanquet, Virgine.

2. A SELECTION OF TWENTY-FOUR OF THE FINEST HYBRID PERPETUALS.

Anna Alexieff, Beauty of Waltham, Comtesse Cecile de Chabrilland, Cardinal Patrizzi, Colonel de Rougemont, François Arago, Geant des Batailles, General Washington, Gloire de Santenay, Jules Margottin, Lord Macaulay, Lord Raglan, Lord Clyde, Louise Darzins, Madame Knorr, Madame Domage, Madame Rivers, Madame Vidot, Mademoiselle Haiman, Olivier Delhomme, Prince Leon, Senateur Vaisse, Victor Verdier, William Griffiths.

3. A SELECTION OF THE HARDIEST ROSES FOR THE COLDEST LOCALITIES IN ENGLAND AND SCOTLAND.

SUMMER ROSES.

Provence—Common Cabbage, De Meaux, Unique.

Hybrid Provence—Blanche Fleur, Comte Plater, Princesse Clementine.

Moss—Common, Alice Leroy, Baron de Wasse-naer, Clemence Beaugrand, Comtesse de Murinais, Gloire des Mousseuses, Laneii, Luxembourg, White Bath.

Gallica—Boula de Nanteuil, Bizarre Marbree, Gloire de Colmar, Latour d'Auvergne, Œillet Parfait, Ohl, Reine des François, Triomphe de Rennes, Triomphe de Jaussens.

Hybrid China—Comtesse de Lacépède, Blairii No. 2, Chenedole, General Jacqueminot, General Allard, Triomphe de Bayeux, Double-margined Hip.

Hybrid Bourbon—Coupe d'Hébé, Paul Ricaut, Charles Duval, Charles Lawson, President Pierce.

Alba—Félicité, Parmentier, La Séduisante, Madame Legras, Sophie de Baviere.

Damask—Madame Hardy, Madame Zoutman, La Ville de Bruxelles.

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Noisette—Solfaterre, Triomphe de Rennes, Aimee Vibert, Fellenberg.

REMINDEES OF MONTHLY WORK IN THE ROSE GARDEN.

JANUARY.

During frosty weather is a good time to have manure wheeled on for top-dressing the plantations. During open weather spread it over the surface and fork it in, but be careful in doing so not to tear or cut the roots of the roses. If the roses are in regular rows, it is a good plan to open a trench eighteen inches deep midway between every two rows, and half fill the trench with manure and return the earth, then proceed to lightly fork the rest of the ground so as to slightly cover the general coating of manure. This is not usually a good time to plant roses, but a good season to get the ground ready for planting next month.

FEBRUARY.

Get all planting done as early as possible, and when all are trodden up and finished, lay on a mulch of half rotten dung two or three inches deep to protect the roots from frost. If the dressing of the plantations was neglected last month, let it be done now; and when any plants appear sickly or deficient of vigour take them up, and remove to reserve ground, or, having pruned them root and branch, introduce some good turfy loam and rotten manure well broken over all the stations, and replant without delay. Roses received from the nursery during

frost, should be placed in a dry dark cellar, without unpacking them, till the frost is gone. If received during bright open weather, unpack them directly, dip their roots in a puddle of clay, soot, and cow dung, beaten into a thick paint, and get them planted, staked, and mulched without delay. Towards the end of the month begin to prune the Provence, Moss, French, and Alba roses.

MARCH.

Consider first what arrears are to be made good, and remember that if we have a long period of dry weather with east winds, every rose that has not been properly attended during the winter will suffer. Go on with the pruning, taking the Hybrid China and Hybrid Bourbon first, next the Hybrid Perpetuals, Bourbon, and the hardiest of the Noisettes. Tie out those that grow in a stiff upright manner to keep the heads open and handsome. In the rose house examine every plant, and where you see a curled leaf hunt till you discover the cause of it, either maggot or fly. If much fly shut the house up close, give no water, and fumigate. Next morning syringe early and give no air till the leaves are partially dried, then give air as usual. Two days after fumigate again whether you see fly or not. Syringe as before. By this treatment you will have no more fly for at least a month, perhaps no more all the

season. Train out specimens in pots, be careful not to snap the wood in bringing the branches down.

APRIL.

Continue pruning, finishing up with Tea-scented, China, and Noisette. If the beds mulched during winter look unsightly through the predominance of straw in the material, sprinkle over it just enough fine earth to hide the rags. If any newly-planted roses have not yet been mulched, do it at once, it will possibly prevent some losses, and certainly do good to all. If drought for any length of time water heavily, and again in ten or twelve days unless rain comes. Towards the end of the month is the best time in the whole year to plant out small plants from pots to form beds and groups of dwarf Hybrid Perpetuals, Chinas, Bourbons, etc. Be sure the plants are first well hardened, and if recently received from a nursery, keep them in a pit a week, then place them on a sheltered border for a week, then plant them.

MAY.

Insects will abound among roses in the open air, and the only way to deal with them is to search them daily, and wherever there is a leaf curled discover the cause. No fear of fly yet out of doors. Where the heads are crowded thin the new shoots by pinching out, and, whether crowded or not, pinch

out all shoots growing inwards and in positions and directions likely to spoil the symmetry of the heads. Suckers will begin to appear and must be removed. This is a good time to look over all the tallies and renew them where needful. If very dry weather give the rosery one very heavy soaking. In the rose house fumigate if the least occasion for it, for aphides propagate rapidly now unless swift destruction overtakes them in their youth. In the case of mildew give plenty of air, plenty of water at the roots, and dust with flowers of sulphur when the leaves are damp. Trees on walls require to be smartly syringed night and morning.

JUNE.

Aphis will probably abound out of doors, and the best remedy will be water. Ply them with the full force of one of Reid's or Warner's engines every evening, and if this does not dislodge, and scatter, and exterminate the vermin, resort to the use of tobacco water. Procure the strongest shag tobacco, pour boiling water on it, in the proportion of half a gallon of water to every ounce of tobacco; when cold and clear, distribute it by means of the finest rose of an engine, choosing a hot, sunshiny day for the task. If practised in the use of the engine you will have no difficulty in wetting every leaf. As tobacco and all other infusions discolour the foliage, give plain water a fair trial first. I am not prepared to

advise the use of *hot water*, but I would recommend all experimental rosarians to ascertain how high a temperature roses will bear without injury, for there is nothing more certain to destroy aphids than immersion in water heated above 150°, it is even more effectual than tobacco. To promote a fine bloom give water copiously two or three times a week, and thin out the buds where they cluster thickly, using for the purpose a small pair of scissors. The weight of the flowers will soon try the trees, so see that they are staked safely. Tie in the shoots from buds entered last summer, and if bloom buds show nip them out. By judicious stopping fine heads may be formed this season, so as to fit the trees for good places in the rosery next year. Begin budding wherever the bark rises freely and suitable buds can be got, the saving of a few weeks in entering the bud is sometimes equivalent to the saving of a whole season in the growth after budding.

JULY.

Before any of the early blooms are past go over the whole stock catalogue in hand and see if the tallies are right, and determine the characters of new varieties as better or worse than old ones in the same class of form and colour. Budding on briars out of doors is the great business of the month. During dull, rainy, close weather neglect everything else to get as many buds in as possible. The manner in

which the several varieties bloom will afford better lessons on culture and especially on pruning, than all the books that ever were written. You will, at least, see the reason for much that, if you do not come to the conclusion that much more, might as well have remained unwritten. Gather all the fading flowers daily, place the petals in open baskets in a shady place to dry, and let the ladies have them for their perfume jars. If you desire seed of any variety allow a few of the first blooms to expand, remove all the rest, give the tree no water and leave the rest to nature and to fate. If you impregnate with selected pollen, tie the impregnated flower in a light muslin bag. To induce any particular variety to seed, keep it on poor diet and give it very little water, the blooms will then come comparatively single, and will furnish or receive pollen, as may be desired. If the flower intended to receive the pollen is not open at the same time as the father flower, the pollen may be taken off with a dry camel's-hair pencil, and be preserved between silver paper till required. In the rose house give air night and day, deluge the place with water, train in all this season's growth; do not shade, except for special reasons, as when yellow roses are just opening then a little shade is good. Dress Perpetuals with some good fertilizer on the surface to help them in the autumn bloom. There is nothing so good as half rotten dung, but as it is unsightly, a mixture of

guano and wood ashes is to be preferred, or soot thinly spread will suffice.

AUGUST.

Continue budding ; all the brier stocks not fit hitherto will now take buds nicely. Loosen the ties of those first budded. Manettis will take buds at the end of the month. In the early part of the month put in cuttings of short nearly ripe shoots, and also of shoots that have flowered. In all cases keep cuttings and eyes alive and fresh by sprinkling their tops frequently rather than making the soil they are in very wet, they will in fact callus quicker if the soil is nearly dry.

SEPTEMBER.

Finish all budding as soon as possible. Loosen the ties of those budded early, taking notice if there is a pretty good junction between bud and stock, in which case tie again loosely, merely to protect from the atmosphere ; if no apparent junction tie again. Some growers cut the tie at the back and leave it to fall away by the swelling of the bud, which it does in time, but not usually until it has done some mischief by resisting the swelling of the wood. Better to untie and tie again than to leave the bud to fight it out. This is the principal season for budding Manettis. At the end of the month put cuttings in the open borders or in pits, where

they are to remain all winter. In the rose house there will now be a grand display of the lovely blooms of Teas, and perhaps of mildew, in which case give plenty of water and frequent dustings of sulphur.

OCTOBER.

Continue to put in cuttings in the open ground. Prepare for making new plantations, and have the ground ready for planting next month. The best way to secure immediate effect is to purchase strong plants that have flowered in nursery quarters, and have them transplanted in November. Make up the list of varieties now, and let all earthwork and manuring be finished as quickly as possible. The reports in the journals of the last season's rose-shows, will be a great help in determining what additions to make to the rosarium, but better than any learned opinions of the merits of roses is your own opinion after having seen them yourself. A few well-formed plants with ripe wood may be selected from the rosery and taken up for potting. Pot them at once, prune them hard, and put them in a cold frame with the pots plunged to the rim till wanted to force.

NOVEMBER.

Planting is the work of the season, but it must only be done when the soil is comparatively dry ;

if wet sets in, lay the plants in by the heels and wait for better times. Get in briers and Manettis, and plant in nursery rows for operating on next season.

DECEMBER.

It is best not to protect any of the tender roses until they have felt a little frost. But take care it is but little, and having given them a taste, protect with loose, light, dry materials which admit of being quickly removed. See that all the standards are safely staked, as if they rock about during gales they will be greatly injured. Newly planted roses should be mulched at once. In the rose house put the first batch in to force, always beginning, if possible, with Common Cabbage and a few of the Teas, as they bear early forcing best of any.

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